



# Technology Acceptance, Organisational Change and Autonomous Motivation: Reducing the Crowding-out Effect in the Non-Profit Sector

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**By**

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## List of Acronyms and Abbreviations

<b>ABS</b>	Australian Bureau of Statistics
<b>AR</b>	Action Research
<b>BPR</b>	Business Process Requirements
<b>CET</b>	Cognitive Evaluation Theory
<b>CMS</b>	Client Management System
<b>DCITA</b>	Department of Communication, Information Technology and the Arts
<b>HRM</b>	Human Resources Management
<b>ICT</b>	Information and Communication Technology
<b>IKM</b>	Information and Knowledge Management
<b>IMTA</b>	Integrated Model of Technology Acceptance
<b>InSyL</b>	Information Systems Laboratory
<b>IS</b>	Information Systems
<b>IT</b>	Information Technology
<b>JHCNSP</b>	John Hopkins Comparative Nonprofit Sector Project
<b>MCT</b>	Motivation Crowding Theory
<b>MTAM</b>	Motivational Technology Acceptance Model
<b>NFP</b>	Not for Profit
<b>NPM</b>	New Public Management
<b>NPO</b>	Non-Profit Organisation
<b>PEOU</b>	Perceived Ease of Use
<b>PPP</b>	Public Private Partnership
<b>PU</b>	Perceived Usefulness
<b>R&amp;D</b>	Research and Development
<b>SASO</b>	Senior Administrative Support Officer
<b>SDT</b>	Self Determination Theory
<b>SSM</b>	Soft Systems Methodology
<b>TAM</b>	Technology Acceptance Model
<b>TQM</b>	Total Quality Management
<b>UC</b>	Uniting Communities
<b>UTAUT</b>	Unified Theory of Acceptance and Use of Technology
<b>WCQ</b>	Work Climate Questionnaire

# **Abstract**

The non-profit sector worldwide has undergone significant change brought about by public sector reforms with the introduction of New Public Management practices. The associated outsourcing of social services has shifted accountability to non-profit organisations (NPOs) and they are being forced to develop and expand their ICT capacity to meet various government reporting obligations. However, ICT-induced organisational change within NPOs has proved problematic, often leading to failure. This thesis focuses on medium and large scale NPOs delivering social services on behalf of government.

Not all change management and other business practices from the private and public sectors are suitable for use in NPOs (despite these being imposed upon them) due to differences in the authority structures, mission, culture and motivation factors of non-profit workers. It has been demonstrated that the motivation of workers (a key differentiator between the sectors) to undertake and persist with organisational change and accept technology is crucial for success; and it is particularly important for NPOs to maintain worker motivation when undergoing change.

The empirical investigation component of this research project was informed by means of a critical analysis and synthesis of the literature in a range of reference disciplines, which provided a strong theoretic framework for the remainder of the work. Key initial theoretical foundations of the project include: the dissection of motivation informed by Self Determination Theory; Frey's Motivation Crowding Theory and the substantial literature concerning technology acceptance, rooted in Davies' TAM, which underpins much thought within the Information Systems community about employee acceptance of technology.

Using a multi-cycle Action Research study undertaken within an exemplar NPO, the project focused on the creation, testing and refinement of an autonomously-supportive organisational change implementation strategy; and the development of an associated Motivational Technology Acceptance Model (MTAM) suitable for NPOs.

The autonomously supportive interventions promoted internalisation of the change process, leading to the use of a more integrated or identified type of self-regulation as well as evidence of a more autonomous type of motivation to accept the change. This, in turn, reduced the crowding-out effect caused during the implementation of the change process.

In addition to offering a path to reducing long term failure rates in NPOs' organisational change projects, this thesis provides the IS community more broadly a deeper and more thoughtful treatment of motivation, offering practical guidance to NPO managers implementing an ICT-induced organisational change.

## **Declaration of Originality**

This work contains no material which has been accepted for the award of any other degree or diploma in any university or other institution, except by way of back ground information and duly acknowledged in the Thesis, and to the best of my knowledge and belief contains no material previously published or written by another person, except where due reference is made in the text of this Thesis, nor does the Thesis contain any material that infringes copyright.

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## Statement of ethical conduct

The research associated with this thesis abides by the international and Australian codes on human and animal experimentation, the guidelines by the Australian Government's Office of the Gene Technology Regulator and the rulings of the Safety, Ethics and Institutional Biosafety Committees of the University.

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## **Chapter 1. Introduction**

The core issue of this research is the pervasive failure of ICT-induced organisational change projects within the Third Sector (non-profit organisations – NPOs). My focus is on medium and large scale NPOs delivering social services on behalf of the Government. The implementation of new public management practices and the associated outsourcing of social services have shifted accountability to NPOs and they are being forced to develop and expand their ICT capacity to meet various government reporting obligations.

The characteristics of the workforce – and in particular the workers' motivations and consequent behaviours – can be seen to form a key differentiator between NPOs and both government and medium-to-large commercial organisations. As a result, traditional approaches to management generally and managing organisational change is less effective in NPOs. It has been demonstrated that the motivation of workers to undertake and persist with organisational change and accept technology is crucial for success (Armenakis and Bedeian, 1999; Likert, 1967; Elias, 2009; Oakland and Tanner, 2007) and it is particularly important for NPOs to maintain worker motivation when undergoing organisational change.

In this thesis I first develop, then justify a strong theoretic framework through a critical analysis and synthesis of the literature from a range of reference disciplines. Key initial theoretic foundations for this work include: the dissection of motivation led by Self Determination Theory; Frey's Motivation Crowding Theory (MCT); and the literature on technology acceptance, rooted in Davies' TAM (Technology Acceptance Model), which underpins much of the IS community's research into technology adoption.

In a multi-cycle Action Research study undertaken within an exemplar organisation I create, test and refine an autonomously-supportive organisation change implementation strategy and outline the Motivational Technology Acceptance Model (MTAM), which I have designed for NPOs. The strategy was developed based on the findings of this study: that when interventions are applied in an autonomously supportive way a more autonomous type of motivation was displayed in accepting change which reduced the crowding-out effect caused (in some cases) as a result of implementing the new system.

In addition to offering a path to the reduction of long term failure rates in organisational change projects in NPOs, the thesis offers the IS community a deeper and more considered treatment of motivation and provides practical guidance for NPO managers who are implementing new information systems and/or technology. The term Information and Communication Technology (ICT) will be used throughout the rest of the thesis (e.g. ICT-induced organisational change); however, it also encompasses the term Information Technology (IT) and Information Systems (IS), all of which refer broadly to equipment, applications, services, hardware, software, and people.

The structure of this chapter is as follows:

- Background: an overview of the initial development of this research project, which includes a brief introduction to the non-profit sector, worker motivation and its importance in the non-profit sector; followed by a discussion of the way in which changes in this sector impact motivation and an introduction to MCT;
- Research Objective: specifies the research questions; an overview of the methodology used; contributions and limitations;
- Thesis Overview: a brief description of the organisation and contents of the remaining chapters.

## **1.1 Background**

The non-profit sector is also known as the not-for-profit, the community or voluntary sector, the civil society, the social economy, charitable organisations, non-government organisations; or the third sector (Salamon et al. 2004, 2012; Morris, 2000; DCITA 2005). As outlined in Chapter 2, this sector is exceptionally diverse and includes groups such as: culture and recreation; education and research; health and social services. Staples (2008) points out that while some researchers limit their focus to, say, the social services sector it is common to allow the reader to infer they are discussing the much broader area of the third sector as a whole. In this research I wish to be clear: my focus is on that part of the third sector which comprises the social services sector.

Increasingly rapid changes are occurring within the non-profit sector worldwide to enable organisations to successfully compete and grow in the market-place (Denison and Johanson, 2007; Ryan, 1999; Soltani et al. 2007), particularly within the social services sector. For NPOs, change has been brought about by public sector reforms with the introduction of new public management practices (Dolnicar et al. 2008).

### **1.1.1 Non-Profits Co-Accountability with Government Funders**

Briefly, new public management (NPM) is a managerial philosophy designed to improve public sector performance and accountability through a ‘managing for results’ administrative doctrine (Baines 2004; Baines and Cunningham, 2015; Bourgon 2009; Hood 1991). A more in-depth explanation of NPM and how it affects NPOs is presented in Section 2.2.

The introduction of NPM principles into the public sector was intended to improve public sector performance and accountability (Baines 2004; Bourgon 2009). As part of NPM, the outsourcing of public services through competitive tendering processes was thought to be the key to lowering costs while increasing the quality of service provided (Goerke 2003; Hood 1991).

In practice, however, outsourcing does not shift “ultimate responsibility”, so that public sector accountability strategies in nearly all industrialised nations have had to be extended to the non-profit sector (Baines, 2010), which is now largely responsible for social service delivery. Data collection and reporting protocols are now typically mandated through funding agreements (Alexander 2000; Bourgon 2009; Sullivan 2009) and this re-dimensioned oversight has led to increased bureaucracy within NPOs (Kramer 2000), in turn leading to widespread change within these organisations.

“[NPOs]...report being swamped by contractual regulation, a multiplicity of reporting requirements, micro management, restrictions on other activities and significantly greater compliance burdens.” (Productivity Commission 2010, p. XXXII).

Greater reporting and accountability requirements imposed by government through funding agreements (Sullivan, 2009) have meant new processes, such as complex accounting processes, must now be embedded in NPOs (Dolnicar et al. 2008; Goerke, 2003; Hoque, 2005). This has led, among other things, to increases in administrative duties and paperwork (Dolnicar et al. 2008) causing a shift away from servicing community needs towards meeting governmental accountability needs (Alexander, 2000; Staples, 2008). With these new processes comes increased managerial control (Baines, 2010) through the adoption of governance structures and professionalised management practices from the private sector (Alexander, 2000; Dolnicar et al. 2008; Hoque, 2005; Kramer, 2000). The whole way in which NPOs are now required to compete for and deliver government funded social services increases pressures on NPO employees and threatens “the sustainability and quality of services” provided (Productivity Commission 2010, p. XXIV).

Many NPOs have also been forced to develop and expand their ICT capacity in order to gather the data needed to meet government reporting obligations (Denison & Johanson 2007). The implementation of this additional ICT capacity has the potential to reshape NPOs and enhance their interactions internally, as well as to improve relationships with funders, donors and clients externally (Burt and Taylor, 2003; Klemz et al. 2003). Despite these apparent benefits, however, ICT-induced organisational change within NPOs has proved problematic in practice and third sector organisations are struggling to adopt and make sophisticated use of ICT, even though most are aware it is necessary (Denison, and Johanson, 2007; Productivity Commission, 2010).

### **1.1.2 Intrinsically Motivated Workforce**

As with any organisational change initiative, employee resistance to change plays a major role in the success or failure of any change program, including the introduction of ICT (Ali et al. 2016; Bovey and Hede, 2001; Davis and Songer, 2008; Meier et al. 2013; Venkatesh and Bala 2008). Yet the motivation of workers to undertake and continue with organisational change initiatives is seen as imperative for success (Armenakis and Bedeian, 1999; Elias, 2009; Oakland and Tanner, 2007).

NPOs tend to have a more intrinsically motivated workforce (Benz, 2005; Mirvis and Hackett, 1983) than is the case with public and private sector employees (Theuvsen, 2004) and, given their financial limitations and much greater dependence on volunteers, it is particularly important for NPOs to maintain this motivation when implementing organisational change.

Very briefly, intrinsic motivation can be described as a feeling of satisfaction or achievement arising without obvious external incentives: when the reward for undertaking an activity is the activity itself (Davis et al. 1992; Frey, 2000) as occurs with volunteering. Motivation is reviewed in significant detail in Section 3.3.

Although it is difficult to measure the intrinsic motivation of non-profit workers directly (see discussion in Section 2.3) it is widely accepted that intrinsic motivation plays a very important role within NPOs (see for example Leete, 2000). In fact, authors such as Alatrasta and Arrowsmith (2004) and Benz (2005) argue that having intrinsically motivated staff gives NPOs a competitive advantage over the for-profit and public sectors. This reliance on an intrinsically motivated workforce (both paid and volunteer) (Benz, 2005; Frey and Jegen, 2001; Leete, 2000) makes it crucial that overcoming barriers to change or to acceptance of ICT innovations (such as employee resistance) are managed so that the intrinsic motivation of staff, clients, volunteers and other stakeholders is preserved.

This research takes into account the unique challenge NPOs face of maintaining an intrinsically motivated workforce while undergoing an ICT-induced organisational change. By focusing on the dynamic mutual interaction of an organisational change initiative and the intrinsic motivation of the workforce, the findings of this research will enable organisations to explore, analyse and perform the necessary organisational change processes so as to encourage adoption and use of ICT while maintaining and possibly enhancing their intrinsically motivated workforce.

In order for the reader to appreciate the research objective it is first necessary to briefly define and state the position of this research on the very broad topic of motivation and its relationship with technology acceptance. These topics are reviewed more fully in Sections 3.2.3 and 3.3.

### **1.1.3 Technology Acceptance and Worker Motivation**

Despite extensive research and a substantial number of publications on the topic (Briggs et al. 2008; Oakland and Tanner 2007; Wagner and Piccoli 2007), ICT implementation project success rates remain low (Legris et al. 2003; Venkatesh and Bala 2008; Venkatesh and Goyal 2010). Many reasons have been given for ICT implementation project failures including: cost blowouts; low adoption and use rates; unwillingness to use a new system; lack of top management involvement and resistance to change (Ali et al. 2016; Davis and Songer 2008; Simonsen 2007; Venkatesh and Bala 2008; Venkatesh and Goyal 2010) but it is not clear that any (or all) of these provide a sufficient explanation for this phenomenon.

Implementing ICT within an organisation is a complex process which causes change affecting workers' motivation and, thus, their behaviour. Understanding the motivation for workers to accept change and adopt and use technology (Davis et al. 1992; Lin 2007) and then developing and implementing effective interventions to support this (Venkatesh and Bala 2008) is crucial for the success of any ICT implementation project. Previous research demonstrates that motivation has a positive impact on ICT adoption and the likely success of implementing change within organisations (see, e.g. Davis et al. 1992; Venkatesh et al. 2003; Gardner and Ash, 2003; Markus, 2004; Likert, 1967).

Since, as already mentioned, NPOs tend to have a highly intrinsically motivated workforce (Section 1.1.2) it is particularly important to understand how an intervention such as an ICT-induced organisational change might affect this motivation. Studying the interplay between an ICT-induced organisation change initiative and worker motivation in the setting of a highly intrinsically motivated workforce (which is characteristic of NPOs) allowed me to develop an effective strategy to reduce the long term failure rates of both ICT adoption and implementation and the organisational change they bring in their wake.

But what is motivation; and what aspect of motivation is relevant to this research? To clarify the research objective of this thesis, a brief discussion of worker motivation is presented here. Using the technology acceptance model (TAM)'s definition of motivation I will briefly illustrate the complexities surrounding this topic which have led to confusion about the topic of motivation within the IS field. As mentioned above, worker motivation will be reviewed more fully in Section 3.3.

Before moving on I must state that my assumption in this research is that people are active organisms – that is: where the organism is volitional and initiates its own behaviour people have intrinsic needs and physiological drives; as opposed to adopting a mechanistic theory which views organisms as passive and reactive (Deci and Ryan 1985). Stating this assumption allows me to investigate motivation from a psychological point of view rather than merely investigating user reactions to characteristics (Deci and Ryan 1985) of the innovation itself and its perceived usefulness as the TAM does.

TAM simplifies and trivialises the concept of motivation (a concept not well developed and used in the IS field) by failing to recognise the fundamental needs influencing behaviour (Howard et al. 2010) as outlined in Section 3.2.3. Briefly the TAM research provides examples of intrinsic and extrinsic motivation, suggesting that perceived usefulness is an 'example' of extrinsic motivation; and that enjoyment is an 'example' of intrinsic motivation which has been used widely in the technology acceptance and adoption literature (see for example: Venkatesh and Bala 2008; Venkatesh et al. 2003; Venkatesh et al. 2012) thus, in effect, limiting the concept of motivation in this field (Malhotra, et al. 2008). Computer playfulness has also been conceptualised as intrinsic motivation (Venkatesh 2000; Venkatesh et al. 2012) within the acceptance and adoption literature. Yet, according to Maslow (1970), playfulness is an example of unmotivated behaviour: a person who exhibits playfulness will only do so after their need(s) have been satisfied – this satisfaction "permits the emergence of unmotivated behaviour...to learn incidentally rather than with purpose" (Maslow 1970, p. 71).

A deeper and more considered treatment of the motivation concept is needed within the IS field. As Venkatesh et al. (2007) state: it is time to “search for alternate theoretical mechanisms that drive the adoption and use of technology in organisations” and that “research focused on interventions, contingencies and alternative theoretical perspectives” is needed (Venkatesh et al. 2007, pp. 267-268) – which is what this research endeavours to produce.

If we look outside the IS field, we begin to find alternative (and somewhat expanded) examples of motivation, such as Deci and Ryan’s (1985) ‘example’ of intrinsic motivation which is based on the fundamental psychological needs of competence and autonomy. These authors believe the emotion of enjoyment represents a reward for intrinsically motivated behaviour. This one alternative example demonstrates TAM’s narrow and simplistic view of the role motivation plays in technology adoption.

Thus, basing our understanding of the intrinsic motivation concept demonstrated in TAM as ‘enjoyment’ and/or ‘computer playfulness’ does not adequately address the complexity of user motivation to adopt and use technology within an organisation. TAM’s simplistic view of motivation restricts its use to design and utilisation interventions to enhance adoption and use both of which are important factors in an ICT-induced organisational change project but are not fully sufficient to explain employee motivation.

Motivation is driven by many needs and desires (Ambrose and Kulik 1999) which originate from within a person (intrinsic motivation) and from external influences (extrinsic motivators). It is widely recognised (even by critics of intrinsic motivation such as Locke and Latham) that needs (both internal and external) underlie all motivation (Latham, 2007). The concept of intrinsic motivation is demonstrated through the “largely unconscious fundamental goals or needs” (Maslow, 1970, p. 27) that all psychological healthy people have to varying degrees at varying times throughout their life (see Section 3.3.3).

A number of motivation theories have been developed from Maslow’s theory to study motivation. Among them are Deci and Ryan’s Self-Determination Theory (SDT) which was developed for ease of use in organisational settings (Gagne and Deci, 2005). SDT postulates that satisfying the basic psychological needs for competence, autonomy and relatedness is a universal necessity crucial to all people’s psychological health (Gagne and Deci 2005). SDT consists of six sub-theories one of which is Cognitive Evaluation Theory (CET): The authors of CET define intrinsic motivation as being:

“...the innate, natural propensity to engage one’s interests and exercise one’s capacities, and in so doing, to seek and conquer optimal challenges. Such motivation emerges spontaneously from internal tendencies and can motivate behaviour even without the aid of extrinsic rewards or environmental controls.” (Deci and Ryan, 1985, p. 43).

CET argues that environmental forces can and do undermine intrinsic motivation (Deci and Ryan, 1985), which (as a controversy) has dominated the research on motivation (Latham, 2007): that is the importance of money as a motivator. For example, Deci and Ryan (1985) from the psychological field and Frey (2000) from the economics field argue that money, used as a motivator, undermines intrinsic motivation; whereas Latham (2007) does not believe money has this effect.

Theorists have been arguing over whether external events affect intrinsic motivation and, thus, behaviour since the mid-1900s (Deci et al. 1999, Latham, 2007). Frey and Jegen (2001) term this effect (i.e. that extrinsic incentives may reduce (or crowd-out) intrinsic motivation) Motivation Crowding Theory (MCT). MCT has also been referred to as CET (Frey and Jegen, 1999; Frey and Stutzer, 2006) because both groups study this same effect. Frey and Jegen (2001) have completed a survey of published empirical evidence from the psychology and economics fields demonstrating that MCT is an “empirically relevant phenomenon” (Frey and Jegen, 2001, p. 589).

#### **1.1.4 Motivation Crowding Theory**

“To understand the concept of work in firms (and elsewhere) two motivations must be taken into account: extrinsic and intrinsic. But what really matters is the systematic relationship existing between intrinsic and extrinsic work incentives; in particular the use of extrinsic incentives may crowd out intrinsic work motivation under identifiable conditions.” (Frey, 1997b, p. 428)

Frey and Jegen (2001) use the term “crowding-out” to describe the following effect: if people perceive external influences via rewards or regulations to be controlling them (Gallus and Frey, 2015), these external influences tend to *crowd-out* their intrinsic motivations.

Two requirements are needed for crowding-out to occur: a sufficiently high intrinsic work motivation must exist at the outset; and “conditions for crowding out intrinsic work motivation must be present” (Frey, 1997b, p. 431). As briefly outlined above, NPOs tend to have a highly intrinsically motivated workforce, thus in this research I assume that a sufficient amount of high intrinsic work motivation exists within Uniting Communities. Theuvsen (2004, p. 130) supports this assumption by demonstrating that “NPOs offer large crowding-out potentials since they often attract intrinsically motivated people”.

The conditions for crowding-out work motivation (the second requirement) are present in this research in the form of changes currently occurring in the non-profit sector brought about by NPM practices (briefly outlined in Section 1.1.1 and more fully in Section 2.2). These changes have included (but are not limited to): increased reporting requirements; increased bureaucracy; increased managerial control over labour process; as well as increased administrative duties; complex accounting processes; and benchmarking activities as outlined in Section 2.2.

Since the crowding-out effect occurs “when an external intervention is perceived to be controlling” (Frey, 1997b, p. 432), worker satisfaction has fallen due to the perceived controlling effects brought about following the introduction of NPM practices into NPOs. Motivation is inherently difficult to measure (Frey and Jegen, 2001), so indirect measures such as satisfaction and performance are generally used to measure motivation. Where worker satisfaction, used as a measure of motivation, has declined it can be hypothesised that organisational changes brought about by NPM practices have created the necessary conditions to crowd-out work motivation. In this research project the introduction of a new IS within an NPO, as a requirement of NPM practices, has the potential to crowd-out the intrinsic motivation of the organisation’s workers if those workers perceive the new IS and corresponding procedural changes to be controlling.

The discussion above has shown that the two requirements for crowding-out to occur have been met, so this research project is therefore based on the Motivation Crowding Theory (MCT) framework. Since MCT is focused on the relationship between external interventions, intrinsic motivation and resulting behaviour (Frey, 1994), MCT provides an ideal framework to evaluate how an ICT-induced organisational change (external intervention) impacts a worker’s autonomous (including intrinsic) motivation and their behaviour in accepting or rejecting change and, thus, the IS being implemented. This analysis then enables the development and implementation of interventions to reduce the crowding-out effects.

As shown very briefly in this section, worker motivation is a complex concept. More information regarding worker motivation and the crowding-out effect is presented in Sections 3.3 and 3.4. The present section has merely provided an overview of motivation. In this section I have:

- Assumed that people are active organisms – that is: where the organism is volitional and initiates its own behaviour (individuals have intrinsic needs and physiological drives);
- Demonstrated how TAM has simplified and trivialised the concept of motivation; and the role it plays in technology acceptance;
- Briefly introduced a deeper and more considered treatment of the motivation concept relevant (which is more fully explained later in this thesis);
- Demonstrated (on the basis of the evidence presented above) that a sufficient amount of highly intrinsic work motivation exists within NPOs (and thus the industry partner organisation for this project) as the first requirement for crowding-out to occur;
- Shown that the conditions for crowding-out work motivation (the second requirement) are present in the situation investigated in this research project in the form of changes currently occurring in the non-profit sector brought about by NPM practices; and
- Demonstrated why this research was based on the framework of Motivation Crowding Theory, since the two requirements for crowding-out to occur have been met.



The empirical investigation was informed by means of a synthesis of relevant research into the motivation of workers to undertake change and accept ICT from the management, economics, psychology and information systems fields. By combining the apparently independent research streams of ICT adoption and acceptance with those relating to ICT implementation projects and ICT-induced organisational change (Barki et al. 2008), I will be able, in Section 3.2, to create a fuller understanding of the motivations underlying the acceptance of change and the adoption and use of technology.

### **1.1.5 Industry Partner**

The industry partner in this research, Uniting Communities (formally UnitingCare Wesley Adelaide Inc.), is one of the largest non-profit, social service providing organisations in Australia. Uniting Communities (UC) has been implementing a range of ICT-induced organisational change initiatives for several years but has experienced significant difficulties in doing so, which is typical of organisations in this sector. UC recognised the strategic importance of this research and agreed to participate by embedding me (the researcher) within an organisational change team in one ICT-induced organisational change project. Recognising the contribution being made, UC then appointed me to a Project Management position to manage another ICT-induced organisational change project part-way through this project – and both these projects are outlined in Section 4.6. UC had previously demonstrated their commitment to this research project by providing a top-up grant to complete this study as a full-time PhD candidate; and in offering me a formal employment role, it was clear they perceived the project and the change management techniques I had been using to be working – and wanted to continue using these in a new project.

The original initiative was undertaken following the successful completion of a pilot implementation, within a single department, of a “whole of organisation” policy-level/conception change project which is outlined in Section 4.4.2.

## **1.2 Research Objective**

The key objective of this research project (based on the MCT framework) is to identify and apply interventions to reduce the likely crowding-out effects during an ICT-induced organisational change. This will lead towards the development of an autonomously-supportive organisation change implementation strategy for the non-profit sector. In order to achieve this, it is necessary to study the interplay between an ICT-induced organisation change initiative and worker motivation.

The three main themes of autonomous (including intrinsic) motivation; attitudes to organisational change; and attitudes to ICT and its acceptance, form the basis of this study and will be explored in the remainder of this thesis. The three main research questions driving the research project are:

- ‘What is technology acceptance and how important is motivation for technology acceptance?’
- ‘What is motivation and how does organisational change affect it?’
- ‘What change management interventions are autonomously supportive; and are these likely to result in increased acceptance of an ICT-induced organisational change?’

Further key research challenges are to:

- Identify and measure the underlying motivations of staff working at or volunteering within NPOs during and after the ICT implementation; and
- Determine what factors are perceived to be controlling during the organisational change process.

Answering these questions and meeting the research challenges will allow me to determine what factors influence autonomous motivation, leading to an acceptance of organisational change and the ICT system being implemented as well as demonstrating the influences these have on one another. By understanding the autonomously supportive motivators causing individuals to accept organisational change and adopt and use technology, NPOs can at least maintain and perhaps increase their intrinsically motivated workforce (a key asset) during the change process, thus negating any crowding-out effects.

### **1.2.1 Overview of Research Methodology**

This empirical research project was undertaken as a multi-cycle action research study and made use of a mixed-method design (Chen and Hirschheim, 2004), utilising the dominant/less-dominant design as outlined in McMurray et al. (2004) in which qualitative approaches were the primary tool, supported by a survey used as a secondary data collection technique (see Kaplan and Duchon, (1988) for an example of using such a combined approach). Soft systems methodology (SSM) was used to guide the research as this is a particularly suitable approach for the exploration of people-centred problems. A full explanation of the research methodology is given in Chapter 4.

The empirical component of the research project was made up of two studies:

- Study One consisted of preliminary data collection which provided an overview of the implementation project itself, together with the qualitative investigation which made use of action research, incorporating grounded theory (to structure and analyse the data) – this is typical of qualitative studies (McNabb, 2008; Myers, 1997);
- Study Two consisted of a quantitative investigation in which the data collected from Study One was combined with relevant theory, leading to the development of a survey instrument and, in turn, to the implementation and analysis of that survey.

### **1.2.2 Contribution**

This research will help to reduce long term failure rates of organisational change projects, including ICT-induced organisational change, by creating a fuller understanding of the motivations underlying the acceptance of change and the adoption and use of technology. This will be achieved by combining the organisational change, ICT-induced organisational change, ICT implementation, ICT acceptance and adoption and motivation research fields. NPOs, in particular, will be able to more effectively respond to the increasing pressures they are under to operate effectively in an increasingly competitive context without losing the strategic advantage of an intrinsically motivated workforce.

The provision of practical guidance (for managers) in any organisation who are implementing new technology (or any organisational change project), using the strategy created in this project, contributes towards closing the gap between intrinsic motivation and attitudes towards organisational change.

The action research study undertaken within Uniting Communities has generated valuable knowledge, not previously available, offering the various research fields interested in motivation, as well as the non-profit sector, a greater understanding of organisational change, ICT acceptance and its impact on the motivation of workers.

This study offers a different perspective of the motivation concept within the IS field and is used as the underlying factor to facilitate a greater acceptance of change and the technology being implemented. The development of the Motivational Technology Acceptance Model (MTAM) and the redefinition of the concepts of perceived usefulness and perceived ease of use more appropriately to reflect the importance of the motivation concept on technology acceptance provides a basis for further research with a focus on motivation.

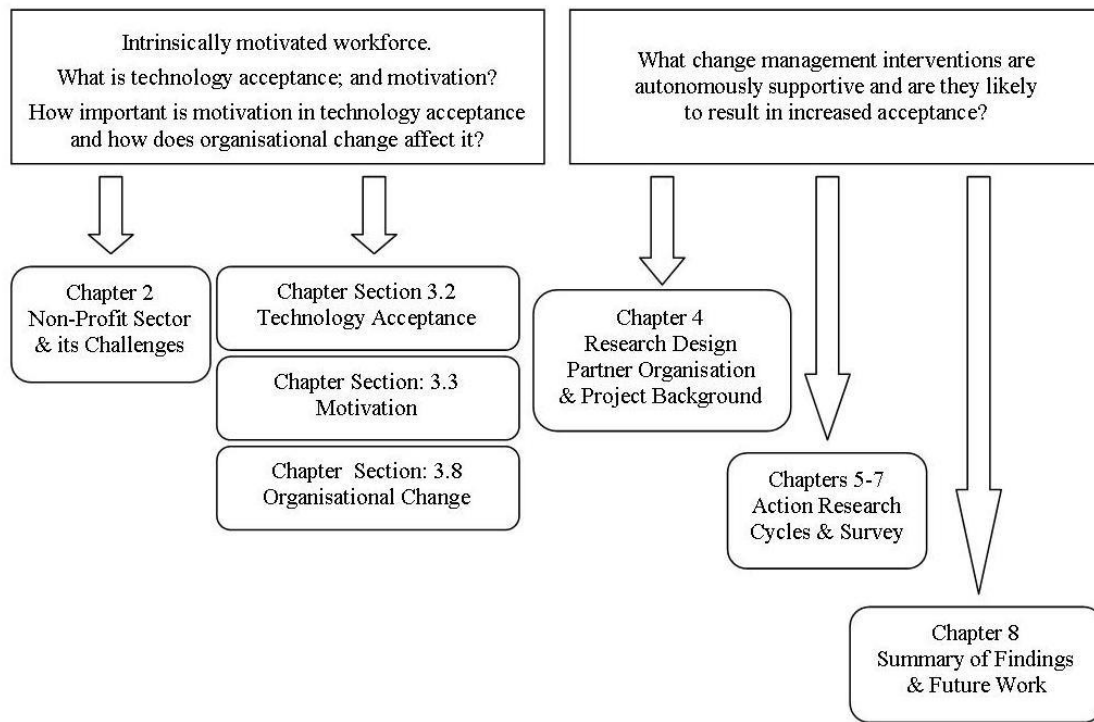
### **1.2.3 Limitations**

To reduce the scope of the research to a manageable size, the following limitations were placed on the project:

- Motivation is defined and only viewed from an ‘organismic’ point of view. Organismic (also known as ‘need’) theories of motivation explain the direction of behaviour (Deci and Ryan, 1985; Latham, 2007), in which needs may be defined “as innate, organismic necessities rather than acquired motives” (Deci and Ryan, 2000). As explained in Section 1.1.3 I have assumed that people are active organisms: that is, where the organism is volitional and initiates its own behaviour (people have intrinsic needs and physiological drives) (Deci and Ryan, 1985; 2000). The assumption underlying these need or organismic theories is that that stated needs are universal, in that they are found in all people (Deci and Ryan, 2008; Latham, 2007). According to Latham (2007) it is these needs which impel behaviour;
- The research is limited to the individuals’ and researchers’ perceptions and interpretations obtained through observations, interviews and a survey instrument;
- The research is further limited to an understanding only of the motivations of workers to accept the change and IS being implemented by investigating controlling and autonomously supportive variables.

## **1.3 Thesis Overview**

An overview of this thesis is represented in Figure 1-1 and a brief description of the organisation and contents of the remaining chapters is outlined below.



**Figure 1-1: Thesis Outline**

**Chapter 2:** This is the first of two literature synthesis chapters and provides an overview of the Non-Profit sector with a focus on the social services component. The implementation of new public management practices; outsourcing by Government of social services and its impact on NPOs is discussed, as is the intrinsically motivated workforce of this group of organisations.

**Chapter 3:** The second of two literature review chapters, this presents and synthesises the underlying topics and theories represented in the literature of: ICT acceptance; worker motivation and how it can be crowded-out; and organisational change. This chapter includes a review of the methodological approaches which may be considered when facilitating any organisational change event, as well as those relating to ICT-induced organisational change, by reviewing the ICT implementation and acceptance literatures – including the dominant acceptance model. The role of motivation in ICT acceptance is also explored. This chapter provides the necessary knowledge to enable me to focus specifically on ICT and change acceptance during an ICT-induced organisational change initiative.

**Chapter 4:** This methodology chapter commences with a description of theory development by analysis and induction and introduces the focus of the research in more detail than has been possible in the present chapter. The change method is then discussed, followed by an introduction to the industry partner and an overview of the pilot project which led to this research project. Finally, the research design and data collection methods used are outlined.

**Chapter 5:** This is Phase One of the empirical investigation and provides a report of how the implementation project (Study One) has progressed since it commenced and what issues have arisen. This chapter follows the action research phases of: stating the problem situation; outlining a plan of the proposed interventions; introducing the action taken to implement the interventions (including data collection and analysis) and how these might affect the problem situation; and, finally, providing a reflection on how this cycle progressed.

**Chapter 6:** Phase Two of the action research study provides a review of the first cycle and uses the Change Factors and Motivation Crowding Model (based on MCT) to guide data collection and analysis in this phase. This chapter makes use of the same presentation format used in Chapter 5. Interventions were applied and the outcomes are discussed in this chapter, leading to the development of MTAM.

**Chapter 7:** This chapter describes Phase Three of the action research study, which culminated in the refinement of an autonomously-supportive organisation change implementation strategy and a test of the associated MTAM by means of a survey instrument (Study Two). The chapter includes a summary and analysis of the relationship between the findings from the action research study (study one) and the survey findings from study two.

**Chapter 8:** This concluding chapter outlines the overall findings of the project, identifies the contributions and limitations of the research and proposes an agenda for future research covering the topics of worker motivation; organisational change; ICT-induced organisational change; and ICT acceptance and adoption.

This thesis contains eight (8) Appendices, however due to the substantial volume of documentation created during data analysis of the action research phases, Appendix 5 (which contains the raw data from those phases) will be provided in the form of a separate file). The appendices contain:

1. Reference List;
2. Ethics Approval;
3. Participant Information Sheet and Consent Form;
4. List of Interview Questions;
5. Data Analysis Documents (separate file);
6. Email to participate in Survey;
7. The Survey Instrument;
8. SPSS® Survey Results.

## Chapter 2. The Non-Profit Sector and its Challenges

### 2.1 The Non-Profit Sector

The exceptionally diverse non-profit sector is also known as the not-for-profit, the community or the voluntary sector, the civil society, the social economy, charitable organisations, non-government organisations and the third sector (Salamon et al., 2004, 2012; Morris, 2000; DCITA 2005; Productivity Commission, 2010; Knutsen, 2016). The Productivity Commission (2010) agrees that the non-profit sector is diverse and goes on to say that the “boundaries are fuzzy” (see Figure 2-1) (Productivity Commission, p.6, 2010).

The Australian federal government agency formerly known as the Department of Broadband, Communications and the Digital Economy (now the Department of Communications and the Arts) has categorised the non-profit sector broadly into:

- Public-serving organisations; those which primarily provide public services within the fields of health, education, community and human services; and
- Member-serving organisations; those which exist for the benefit of their members, such as sporting and recreation clubs, religious groups and trade unions (among others).

The Productivity Commission makes use of this dyadic categorisation, although it has changed the term ‘Public-serving’ to ‘Community-serving’ organisations. Figure 2-1 below illustrates how the Productivity Commission categorises the non-profit sector in Australia.

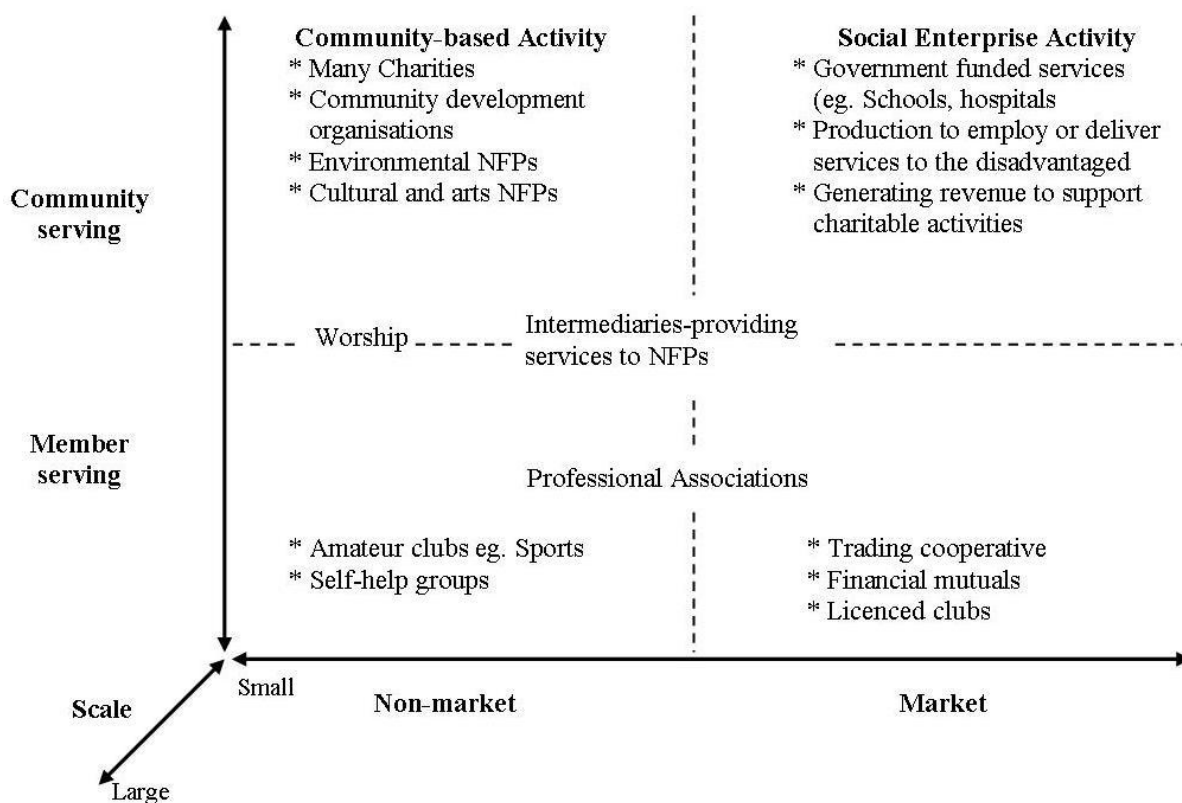


Figure 2-1: The NFP sector is diverse and boundaries are fuzzy (Productivity Commission, p.8, 2010)

The John Hopkins Comparative NonProfit Sector Project (JHCNSP), which began in 1991, is the most comprehensive worldwide study of the non-profit sector. This project involves over 45 countries and has produced over 300 published articles; as well as many working papers, country reports and presentations (Salamon et al., 2004; John Hopkins University Centre of Civil Society Studies website, 2016). Despite its accepted limitations (Morris, 2000), the international acceptance and substantial number of citations of the JHCNSP definition make it a useful illustration of an NPO.

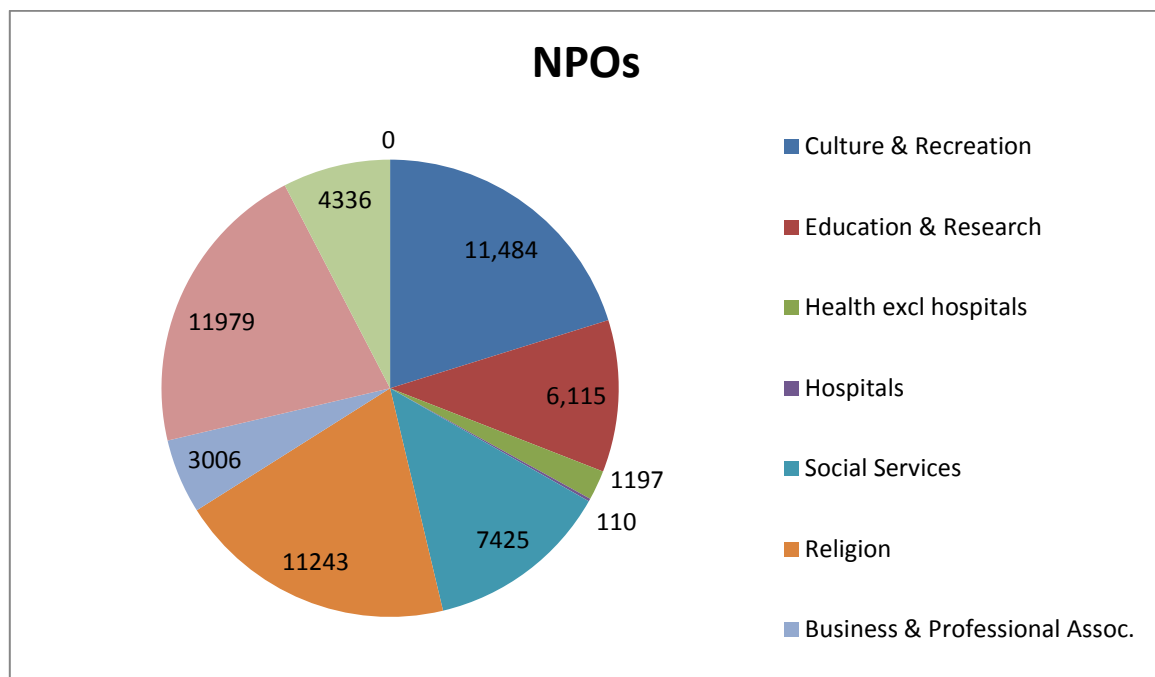
JHCNSP has concentrated on five structural-operational features to define NPOs (Salamon et al., 2004; 2012):

- Organised – some type of structure and regularity exists, whether formally or informally.
- Private – not part of the state sector, but may receive support from governments.
- Not profit-distributing – do not distribute profits and are not primarily commercial operations.
- Self-governing – governance is internal and the organisation can cease operations under its own authority.
- Voluntary – not compulsory and involves some type of voluntary participation.

Worldwide official data relating to the scope and structure of the non-profit sector has been limited (Salamon et al. 2012) until the *Handbook on Nonprofit Institutions in the System of National Accounts* was issued by the United Nations in 2003 to encourage countries' statistical offices to produce regular satellite accounts (Salamon et al. 2012). In financial terms the non-profit sector worldwide, if it were an economy, would be comparable with the world's seventh largest economy. As of the late 1990's this sector is a US\$1.3 trillion industry employing a "total aggregate workforce of 45.5 million full time equivalent workers (paid and volunteer)" (Salamon et al., 2004).

In 2007, 8.5% of the workforce (paid and volunteer) were employed by NPOs in Australia compared with 7.4% on average (across 13 countries) (Salamon et al. 2012) and finally in 2012-13 NPOs employed 1,081,900 people (ABS, 2014). The then Department of Communications, Information Technology and the Arts (DCITA 2005) identified over 700,000 organisations in Australia's non-profit sector and noted that upwards of 65% of the population was associated with some type of non-profit organisation, while admitting that it is difficult to "determine the total size and contribution of the sector" (DCITA 2005). "In 2006-07, the not-for-profit (NFP) sector workforce was made up of 890,000 paid workers and 4.6 million volunteer workers" (Productivity Commission, 2010, p.250).

The Australian Bureau of Statistics (ABS) issued its first dedicated survey of Not-for-Profit organisations covering the reference years 1999-2000. The second survey was released in August 2008, covering the 2006-07 reference years, and the third survey was released in June 2014, updating statistics from the second survey and adding new data covering the reference years 2012 – 2013. The second study was a supplement to the Australian National Accounts: Non-Profit Institutions Satellite Account; and has been widely referenced in the literature. The ABS states their survey showed 56,894 (ABS, 2014) not-for-profit organisations in Australia at that time (see Figure 2-2 below). This survey does have limitations, possibly the most significant of which was the exclusion of those non-profit organisations not having an Australian Business Number.



**Figure 2-2: Number of registered not-for-profit organisations in Australia by groups – 2012-13 (ABS, 2014)**

Defining and classifying the non-profit sector is a difficult and complex task (Salamon et al., 2004; Morris, 2000; Considine, 2003). The International Classification of Nonprofit Organisations (ICNPO), which lists 12 main groups and their sub-groups as outlined in Table 2-1, is the most widely used classification system – and is utilised in this thesis.

**Table 2-1: International Classification of Nonprofit Organisations (ICNPO): major groups and subgroups. (adapted from Australian Bureau of Statistics website, 2014; Salamon, et al., 2004)**

INCPO Major Groups	INCPO Sub Groups
Group 1: Culture and Recreation	1 100 Culture and Arts
	1 200 Sports
	1 300 Other Recreation and Social Clubs
Group 2: Education and Research	2 100 Primary and Secondary Education
	2 200 Higher Education
	2 300 Other Education
	2 400 Research



<b>INCPO Major Groups</b>	<b>INCPO Sub Groups</b>
Group 3: Health	3 100 Hospitals and Rehabilitation
	3 200 Nursing Homes
	3 300 Mental Health and Crisis Intervention
	3 400 Other Health Services
Group 4: Social Services	4 100 Social Services
	4 200 Emergency Relief
	4 300 Income Support and Maintenance
Group 5: Environment	5 100 Environment
	5 200 Animal Protection
Group 6: Development and Housing	6 100 Economic, Social and Community Development
	6 200 Housing
	6 300 Employment and Training
Group 7: Law, Advocacy and Politics	7 100 Civic and Advocacy Organisations
	7 200 Law and Legal Services
	7 300 Political Organisations
Group 8: Philanthropic Intermediaries and Voluntarism Promotion	8 100 Grant-making Foundations
	8 200 Other Philanthropic Intermediaries and Voluntarism Promotion
Group 9: International	9 100 International Activities
Group 10: Religion	10 100 Religious Congregations and Associations
Group 11: Business and Professional Associations, Unions	11 100 Business Associations
	11 200 Professional Associations
	11 300 Labor Unions
Group 12: Not Elsewhere Classified	12 100 Not Elsewhere Classified

This research project crosses the boundaries of Groups 3 (Health) and 4 (Social Services), also known in Australia as Community Services. The Social Services sector is the second largest not-for-profit sector in Australia in terms of income, (Table 2-2) and includes organisations which provide: youth and family welfare; childcare; disabled and elderly services; emergency accommodation and homeless assistance. This sector's income is predominantly obtained from federal, state and local government funding (ABS, 2014).

**Table 2-2: Total value by not-for-profit groups in Australia – 2012-13 (ABS, 2014)**

	<b>Income \$m</b>	<b>Industry Value \$m</b>
Culture & Recreation	16,604	7,260
Education & Research	26,561	16,047
Hospitals	8,265	4,152
Health excl hospitals	10,210	5,733
Social Services	19,194	10,707
Religion	4,292	1,680
Business & Professional Assoc	4,789	1,714
Environmental, Developmental etc.	11,645	4,387
Other	5,919	2,239
<b>Total</b>	<b>107,480</b>	<b>54,796</b>

In addition to the many names which highlight the diversity of this sector, it is important, when analysing the literature, to gain a wider understanding of just how broad the third sector really is. Some researchers infer they are discussing the third sector as a whole. However, their study is limited to just one group (e.g. health – see Table 2.1) For example, Bhattacharjya and Venable (2006a; 2006b) highlight the importance of the entire non-profit sector in Australia, but in fact, only name some of the social services and health groups of the third sector in their study. This research project, however, focuses specifically on that part of the wider third sector which comprises the social services group,(group 4 in Table 2.1), and also includes the sub-group of 300 – Mental Health and Crisis Intervention.

The Social Services NPO group in Australia (the main focus of this research) provides a public service to those most in need by delivering a variety of social welfare programs; and is seen as a very important contributor to Australia's economic and social wellbeing (DCITA, 2005; Considine, 2003). Considine (2003) says that governments which employ NPOs to provide social services may be doing so in response to bureaucratic or market failure (the 'remedialist' view) or to add a new value to the public service system (the 'essentialist' view).

The growing dependence of NPOs on government funding, together with increased competition from private organisations, is based on contracting through such vehicles as Service Agreements (Abramovitz and Zelnick, 2015; Considine, 2003; Cunningham et al., 2013; Kramer, 2000; Milligan, 1998). This leads to a significant additional obligation for governmental monitoring, evaluation and oversight (Cunningham et al., 2014; Milligan, 1998). Kramer (2000) notes that NPOs have become institutionalised, professionalised and more bureaucratic by becoming the primary partner to government in providing social services and advocacy; a view supported by Abramovitz and Zelnick (2015). This change has been brought about by the introduction of new public management principles into the public sector as outlined in the next section.

## **2.2 New Public Management and its Impact on NPOs**

New public management (NPM) is a managerial philosophy designed to improve public sector performance and accountability through a 'managing for results' administrative doctrine (Baines, 2004; Bains and Cunningham, 2015; Bourgon, 2009; Hood, 1991). While no strict definition of NPM exists (Hood, 1991; Hood and Peters, 2004) it is synonymous with results-based accountability and performance (funding outcomes) and neo-liberal policies (Baines, 2010; Baines and Cunningham, 2015; Bourgon, 2009; Staples, 2008).

It has been argued (*inter alia*) that public sector reform was necessary because the old system of management was inefficient (Goerke, 2003; Moynihan, 2006). The old public sector management approach was focussed on financial input control, whereby managers were responsible for ensuring that money was spent for its allocated purpose only. If there was any money left over it was reallocated back to the Government as a whole. In short, management had very little, if any, control over its resources, either financial or human (Bourgon, 2009; Dunleavy et al. 2005; Moynihan, 2006).

NPM, by contrast, essentially proposes that managers be given more authority and control over their resources to enable them to be accountable for the performance of their agency, the theory being that this would lead to increased productivity through improved processes (Hoque, 2005; Moynihan, 2006). Competition was used as a means of allocating resources, in preference to the old hierarchical decision making approach (Dunleavy et al. 2005). The elements which make up NPM have been described by Hood (1991) and Hoque (2005) as comprising:

1. *Hands-on professional management* – clear assignment of managerial responsibility for action – discretionary control;
2. *Explicit standards and measures of performance* – defining goals, targets and indicators of success – benchmarking;
3. *Greater emphasis on output controls* – resource allocation and rewards linked to performance measures (accountability); and decentralisation of personnel management;
4. *Disaggregation of Public Sector units* – shift to corporatised units based around products – use of contract or franchise arrangements inside and outside the public sector;
5. *Increased competition* – using contracts and public tendering procedures to supply public services and products;
6. *Adoption of Private Sector management practices* – including employment conditions such as greater flexibility in hiring and rewards;
7. *Increased discipline and parsimony in resource use* – budgeting focussed on cost cutting, process efficiency, raising labour discipline.

These elements of NPM were introduced into the mainly Anglo countries of the United Kingdom, Canada, New Zealand and Australia (Moynihan, 2006; Baines, 2010; Dunleavy et al., 2005) during the late 1970s (Hood, 1991). During the 1980s and 1990s, Australian governments relied heavily on NPM principles by using “competitive market mechanisms for allocating resources and driving production efficiency” (Productivity Commission, 2010, p.24). This has resulted in increased managerial authority, which has decentralised the formerly government-wide financial management and human resources systems to the individual agency level (Bourgon, 2009; Dunleavy et al 2005; Moynihan, 2006).

Increased competition was thought to be the key to lowering costs while increasing the standard of services provided (Goerke, 2003; Hood, 1991). This increased competition was introduced internally, as a means to allocate resources. External competition was also introduced (Dunleavy et al. 2005; Teicher et al. 2006) so that public, private and non-profit organisations “compete to procure the rights to deliver a public service” (Dunn and Miller, 2007, p. 348) through competitive tendering processes (Baines, 2010; Cunningham et al. 2013). As more services are outsourced and privatised (Baines, 2004; Moynihan, 2006) governmental administration and service provision has reduced (Baines, 2004; Dunleavy et al. 2005; Goerke, 2003). Private organisations have found that profits can be made through the privatisation of social services, such as child care, aged care and employment services (Goerke, 2003), which were previously provided by the public and/or non-profit sectors, thus increasing competition still further.

The success of NPM has been limited (see, for example, Bourgon, 2009; Drechsler and Randma-Liiv, 2014; Dunleavy et al, 2005; Frey et al. 2013; Hood and Peters, 2004; Lodge and Gill, 2011; Sullivan, 2009). Dunleavy et al (2005, p. 467) argue that NPM “has now largely stalled or been reversed in some key ‘leading edge’ countries” due to unintended adverse effects (Hood and Peters, 2004) associated with attempts to solve social problems. The authors use New Zealand as an example, explaining that;

“NPM structural changes have left a country of 3.5 million people with over three hundred separate central agencies and forty tiny ministries, in addition to local and health service authorities...combating the vertical siloing of agencies came to be identified...as a key priority for change...” (Dunleavy et al. 2005, pp. 470-471).

This fragmentation of the bureaucracy has made it difficult for “citizens at large to understand” (Hood and Peters, 2004, p. 276) the structure of social service provision. Dunn and Miller (2007) and Drechsler and Randma-Liiv (2014) go further, arguing that the NPM goal of creating a more efficient public sector has failed; and Sullivan (2009) argues that the goal of achieving greater accountability has not been reached. Frey et al. (2013) argue that the output-related performance measures and the pay for performance rewards which have been implemented in public sector organisations across the world as a result of NPM practices do not have the desired effect of increasing public worker motivation and, thus, improved services. They point out that that these “negative effects are stronger” in the public sector than the private sector (Frey et al. 2013, p. 949). Finally, Woolford and Curran (2011, p. 584) argue that these changes have “severe consequences for relationships between social service agencies and service users.”

Despite these failings, elements of NPM continue to exist in many countries today (Baines and Cunningham, 2015; Bourgon, 2009; Cunningham et al. 2013; Drechsler and Randma-Liiv, 2014; Dunleavy et al. 2005; Frey et al. 2013). Drechsler and Randma-Liiv (2014, p. 8) state that, globally, “NPM as a toolbox never really went away”. New Zealand has often been referred to as a leader in implementing key elements of NPM (Drechsler and Randma-Liiv, 2014; Lodge and Gill, 2011) and recognised its failings (as outlined above). Lodge and Gill (2011) have found that while New Zealand has tried to move away from NPM practices, the government has continued to use elements of it.

According to Moynihan, (2006) state governments in the United States developed and implemented a managing for results (MFR) framework during the 1990s based on NPM ideals focusing on results and performance of the public sector, with limited success. Moynihan (2006) argues that partial implementation of NPM practices (namely, strategic planning and performance measurement); whilst neglecting other crucial aspects designed to increase managerial authority to implement change has led to disappointment in the benefits (high performance improvement) that were expected. Dunleavy et al. (2005, p.468) argues that NPM “has essentially died in the water” for countries such as the United States (US). The most prominent example of this is the reestablishment of central processes, which Dunleavy et al. (2005, p. 481) call “re-governmentalization”, where US airport security staff were transferred from private contractors back to the federal civil service following the 9/11 terrorist attacks because the hijackers had “passed through privatized airport security systems” (Dunleavy et al. 2005, p. 482).

In Australia public-private partnerships (PPPs) have evolved from increased competition brought about by NPM through contracting out and privatisation of services (Teicher et al, 2006, p. 90). The evolution of PPPs has been guided by three NPM principles: “a strong focus on outcomes”; focused; increased competition and the role of government changing from provider to purchaser of services (Teicher et al., 2006). In contrast to NPM contractual arrangements, PPPs (these authors argue) are a mutual partnership between government and private sector and/or NPOs providing services to society, where risks and returns are shared based on agreed performance outcomes (Teicher et al., 2006).

The authors use the Job Network as one example of a PPP. This network is a federally funded and controlled employment service provided by 109 agencies consisting of three partners, (i.e. government agencies, private business and NPOs) (Teicher et al., 2006). The authors cite a number of problems with this arrangement, including multiple compliance burdens and excessive direction by the government resulting in change being imposed on providers at their own cost, as accountability has shifted to the providers who have to comply with contracts (Teicher et al. 2006). Sullivan (2009) supports Teicher’s claims by arguing that community service organisations providing services in aboriginal affairs are now more focussed on the reporting requirements as a result of this shift in accountability at the expense of providing practical services to their aboriginal clients. As reported in Butcher and Freyens (2011) the Australian Government used a competitive tendering process (similar to the establishment of the Job Network outlined above) to establish Family Relationship Centres (FRCs) across Australia. These authors argue that their investigation into the FRCs initiative “only partly confirms the critique of third party contracting” (Butcher and Freyens, 2011, p. 28) because “collaborative and collegial behaviour” has been demonstrated between NPOs and government, despite the fact that have also found that the “competitive selection process imposed significant costs” (Butcher and Freyens, 2011, p.15) on NPOs such as costs associated with bid preparation, organisational stress and worker burnout (from short implementation timeframes) and, as mentioned above, “burdensome compliance reporting” (Butcher and Freyens, 2011, p.19).

As demonstrated above, NPM has extended governmental accountability to the social services sector through funding agreements and their reporting requirements (Alexander, 2000; Bourgon, 2009; Sullivan, 2009; Woolford and Curran, 2011). This extended accountability has led to increased bureaucracy for NPOs (Kramer, 2000; O'Regan and Oster, 2002), causing widespread changes (Baines and Cunningham, 2015) to operating procedures and activities. As Baines (2004, p.7) explains:

“Accountability and efficiency, under NPM are constructed entirely as achievement of performance targets...management control over the labour process necessarily increases, resulting in major changes in work organisation.”

Greater reporting and accountability requirements imposed by government through funding agreements (Sullivan, 2009) has led to new processes, such as complex accounting processes, being embedded in NPOs (Dolnicar et al. 2008; Goerke, 2003; Hoque, 2005). This in turn has led, among other things, to increases in administrative duties and paperwork (Dolnicar et al 2008), causing a shift away from servicing community needs towards meeting governmental accountability demands (Alexander, 2000; Staples, 2008; Woolford and Curran, 2011). With these new processes comes increased managerial control (Baines, 2010; Baines and Cunningham, 2015) through the adoption of governance structures and professionalised management practices adopted from the private sector (Alexander, 2000; Dolnicar et al. 2008; Hoque, 2005; Kramer, 2000).

The emphasis for NPOs has moved from a focus on their client base to a focus on business-oriented practices, leading to the standardisation and commercialisation of services (Alexander, 2000; Baines, 2010; Cunningham et al. 2013). Benchmarking and ‘best practice’ concepts have spread from private businesses to the public sector and through to NPOs as a result of NPM (Baines, 2010; Hood and Peters, 2004; Hoque, 2005). Non-profit workers are now being evaluated on how well they meet set objectives and financial and performance targets, resulting in a loss of worker control and integrity and, among other things, demoralisation. In short, worker satisfaction with the work itself, management and the organisation has declined as shown by Alexander (2000), Baines (2004; 2010) and Considine (2003).

Alexander (2000) and Dolnicar et al (2008) argue that not all business practices from the private sector are suitable for use in the non-profit sector due, among other things, to differences in authority structures and mission. In particular, Alexander (2000) argues that management holds a weaker authority bond over non-profit workers compared with the private sector, so that traditional private sector management approaches are difficult to implement for NPOs. Dolnicar et al (2008) argue that there is an increasing tension between mission and money, as NPOs typically have a non-financial mission. Increasing pressure from funding bodies, however, requires them to focus on the costs and efficiency associated with the provision of services.

These ‘administrative demands’ (in the form of performance measures) generally involve the collection of information pertaining to the provision of a service, such as documenting and processing individual service users (Baines, 2010). More often than not the same information is collected multiple times by the NPO as a result of the fragmented nature of governmental units purchasing social services brought about by NPM (Dunleavy et al. 2005).

The development of an ICT capacity by NPOs, generally in the form of a management information system, has been deemed necessary in order to document measurable outcomes (Alexander, 2000; Dunleavy et al. 2005; Hoque, 2005) required by government funding bodies. Yet the non-profit sector “lags behind on the adoption of ICT” (Productivity Commission, 2010, p.230) due to limited resourcing in funding and skills; and, in some cases, they are “reluctant to adopt new technologies where these alter control over information or valued traditional approaches” to service delivery (Productivity Commission, 2010, p.231).

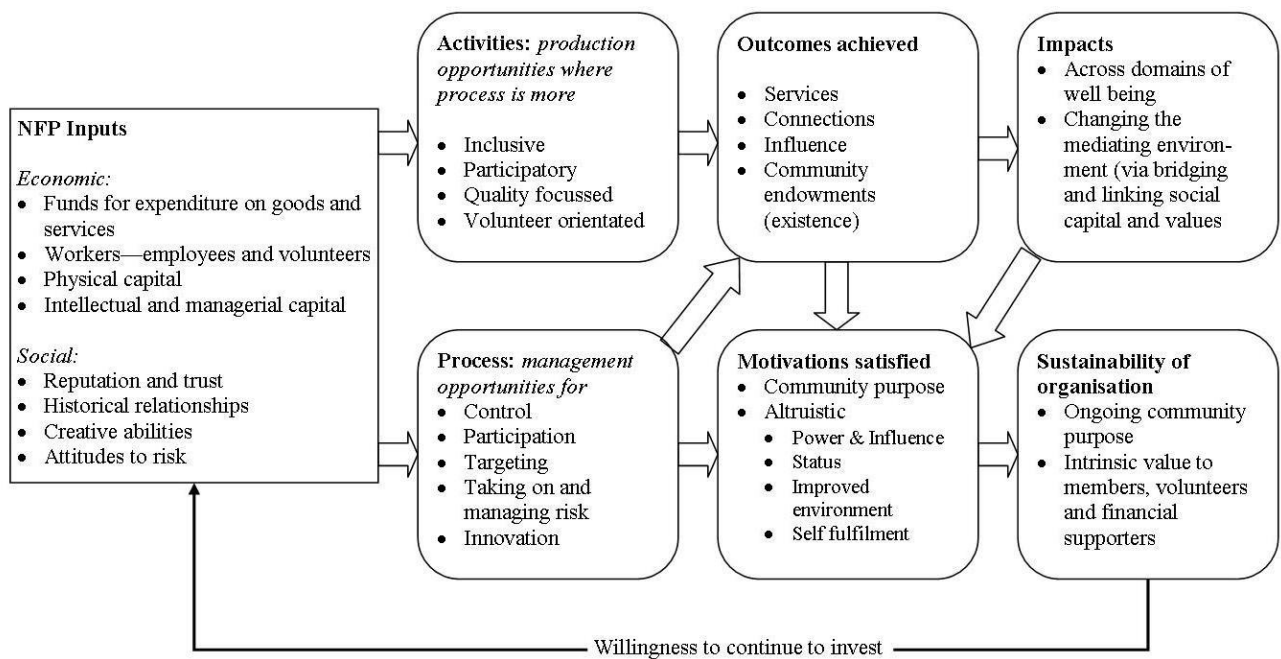
## **2.3 NPOs’ Intrinsically Motivated Workforce**

According to the Productivity Commission (2010, p.15), NPOs are “driven by their ‘community purpose’” and it is this community purpose which makes NPOs operate differently from other organisations. The report notes that:

“Control can be a major motivating factor for the managers of NFPs. While generally motivated by altruism, NFP management also benefits personally from their role when it confers status or power, builds their skills and contacts, and where it improves the environment for their other activities.” (Productivity Commission, 2010, p.13).

According to the Productivity Commission (2010) NPOs like to have control over their processes (how they deliver services) and what they are doing for the community; and it is the combination of control and community purpose which differentiates NPOs from other organisations. The processes NPOs use are “participatory, inclusive, quality focussed and accessible” and are an important motivating factor (Productivity Commission, 2010, pp.15-16). Figure 2-3 below is representative of how NPOs operate and the role motivation plays.

Motivation of workers is particularly important for NPOs since they are said to be more intrinsically motivated (Benz, 2005; Mirvis and Hackett, 1983; Ridder and McCandless, 2010) than public sector and for-profit employees (Theuvsen, 2004). Very briefly, intrinsic motivation can be described as a feeling of satisfaction or achievement arising without obvious external incentives: where the reward for undertaking an activity is the activity itself (Davis et al., 1992; Frey, 2000), as occurs with volunteering. An introduction to motivation is presented in Section 1.1.3, with Motivation reviewed in more detail in Section 3.3.



**Figure 2-3: A schema of how NPOs operate (Productivity Commission, 2010, p.16)**

Benz (2005), and Borzaga and Tortia (2006) found that although the assertion has been made that non-profit workers are more intrinsically motivated than public sector or for-profit workers, this had only ever been indirectly tested by using a monetary differential approach. Benz (2005) found that non-profit workers were more satisfied in their work than for-profit workers, a finding consistent with the view that NPOs “offered substantial intrinsic work benefits” (Benz, 2005, p. 173). Borzaga and Tortia’s (2006) satisfaction and loyalty worker survey of non-profit, for-profit and public sector workers found that intrinsic motivation strongly influences worker satisfaction and that non-profit workers, in particular, used intrinsic reasons for selecting an organisation to work in. Valentinov (2007) argued that non-profit stakeholders were more likely to be intrinsically, rather than extrinsically, motivated as demonstrated through the intrinsically motivated forms of support offered by stakeholders, such as donations, volunteering and working for a lower salary. His paper concluded that NPOs can exhibit greater amounts of intrinsic motivation than for-profit organisations (Valentinov, 2007). In a more recent study, De Cooman et al. (p. 296, 2011) found that non-profit workers “were more motivated by identified and integrated regulation” – a form of autonomous motivation (incorporating intrinsic motivation) which is explained in Section 3.4.



Intrinsic motivation is inherently difficult to measure (De Cooman et al. 2011; Frey and Jegen, 2001), which is why indirect measures such as satisfaction are employed. According to Latham (2007), Mayo's Hawthorne studies were among the first to link motivation, job satisfaction and performance. Although the causal relationship between job satisfaction and performance (or the converse) remains a controversial issue in motivation research (Latham, 2007), satisfaction is still used to measure motivation. With the invention of the Likert scale, attitude surveys have been (and continue to be) the main data collection method in motivation studies (Latham, 2007). Satisfaction (as an attitude) in particular is used to measure motivation: this satisfaction can relate to the satisfaction of needs, the work itself, management, or the organisation (Latham, 2007). For example, the Minnesota Satisfaction Questionnaire (MSQ) is designed to "asses an employee's intrinsic (e.g. sense of achievement) and extrinsic satisfaction (e.g. pay)" (Latham, 2007, p. 39). Deci and Ryan's Self Determination Theory website at Rochester University provides a suite of motivation questionnaires such as the Basic Psychological Needs Scale (BPNS) which is used to measure need satisfaction in general and at work; and the Intrinsic Motivation Inventory (IMI) which uses interest and enjoyment to measure intrinsic motivation. Measuring motivation is discussed more fully in Section 0.

When satisfaction and/or attitudes are measured it is difficult to discern whether one is measuring intrinsic or extrinsic satisfaction (Deci and Ryan, 1985). Rather than trying to measure the amount of intrinsic or extrinsic motivation, Deci and Ryan have created a continuum of motivation focusing on motivation types. This continuum of motivation has been classified into autonomous motivation (which includes intrinsic motivation), controlled motivation and amotivation as predictors of performance (Deci and Ryan, 2000; 2008; Ryan and Deci, 2006). A study by De Cooman et al. (2011, p. 311) has supported "the theory that autonomous motivation significantly predicts a greater work effort" which could also be used to measure motivation. See Section 3.4 for more information on this issue.

Although it has been difficult to directly measure the intrinsic motivation of non-profit workers, as demonstrated above, it is widely accepted that intrinsic motivation plays a very important role within NPOs (see for example Leete, 2000; Productivity Commission, 2010). In fact, some authors such as Alatrasta and Arrowsmith (2004) and Benz (2005) argue that having intrinsically motivated staff gives NPOs a competitive advantage over the for-profit and public sectors. Since NPOs rely on an intrinsically motivated workforce (both paid and volunteer) (Benz, 2005; Frey and Jegen, 2001; Leete, 2000) it is important that barriers to change and ICT acceptance (such as employee resistance) must be dealt with in such a way that the intrinsic motivation of staff, clients, volunteers and other stakeholders is preserved, to ensure success.

## 2.4 Chapter Summary

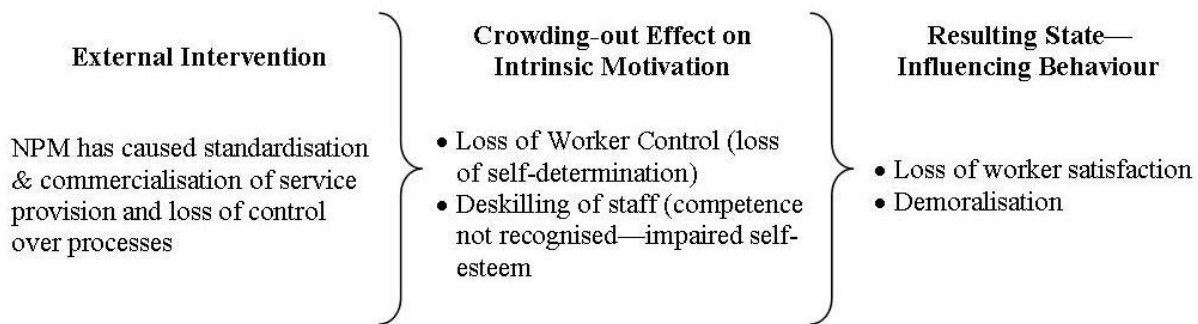
Baines' (2004; 2010) studies on the restructuring of the Canadian and Australian non-profit social services sectors revealed that NPM practices have led to standardisation of services. Workers and services are now being evaluated on how well they meet set objectives and financial and performance targets which, according to Cunningham et al. (2013, p. 172), has led to "the introduction of more detailed and rigorous systems of performance management". These changes, in turn, have led to an increase in work pace, volume and intensity (Cunningham et al. 2013), causing burnout, injury and illness to staff (Baines, 2010). Standardisation of services has also led to the deskilling of staff; loss of worker control, integrity, demoralisation; and to a decline in the staff/client relationship, deemed to be important to workers, in this sector (Baines, 2004; Baines and Cunningham, 2015; 2010; Woolford and Curran, 2011). Considine (2003) found similar results in the Australian employment services sector, where NPOs increased their workloads in order to remain competitive and meet financial targets. This resulted in less time spent addressing clients' problems and more time spent addressing employers' needs and meeting "the administrative demands of the government purchasing authority" (Considine, 2003 p. 75). As mentioned in Section 2.3, control over processes (i.e. how they deliver their services) is an important motivating factor for the effective operation of NPOs, however, "as NFPs grow and become more 'professional' in their management, this type of 'value' from process tends to diminish" (Productivity Commission, 2010, p.19).

In summary, the introduction of NPM practices into the public sector has had unintended adverse effects on those organisations (particularly NPOs) now providing social services on behalf of the government. These organisational effects have led to the standardisation and commercialisation of services which, in turn, has had an impact on non-profit workers as outlined in Table 2-3.

**Table 2-3: NPM effects on NPOs and its workers**

<b>Effects of NPM on NPOs</b>	<b>Impact on Workers</b>
Increased bureaucracy	Deskilling of staff
Greater reporting and accountability	Loss of worker control and integrity
New processes	Demoralisation
Increased managerial control over labor processes	Decline in staff/client relationship
Benchmarking activities	Loss of worker satisfaction
Development of technical capacity	Little room for professional discretion
More rigorous performance management	Job insecurity

As outlined in Section 1.1.54, two requirements are needed for crowding-out to occur: a sufficiently high intrinsic work motivation must exist at the outset; and "conditions for crowding out intrinsic work motivation must be present" (Frey, 1997b, p. 431). As stated earlier, Motivation Crowding Theory (MCT) considers the relationship between external interventions, intrinsic motivation and the resulting behaviour (Frey 1994) and two psychological processes (loss of self-determination and competence not being recognised) account for the crowding-effect. Based on the evidence presented here, the conclusion has been drawn that NPM crowds-out the intrinsic motivation of non-profit workers as demonstrated in Figure 2 – 4 below.



**Figure 2-4: MCT Framework Model using NPM as the external intervention**

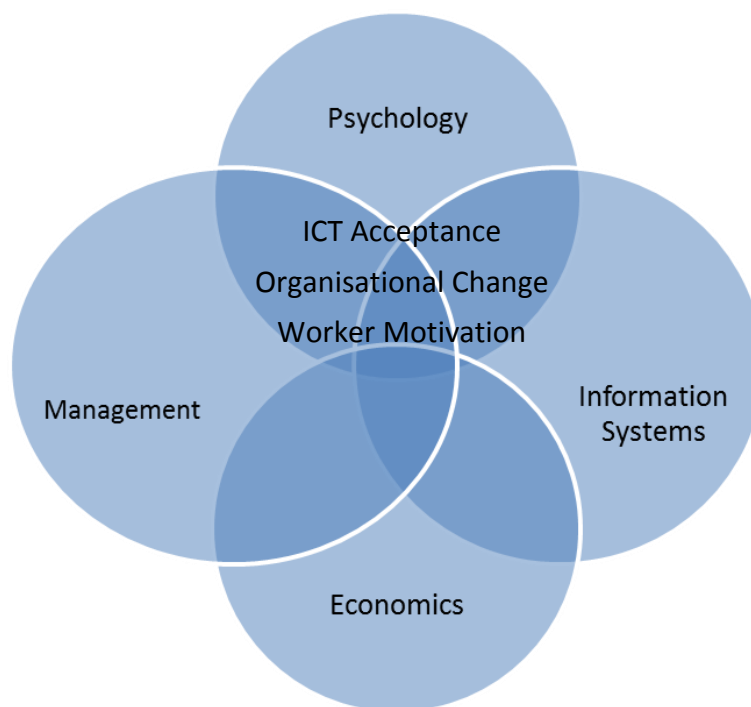
This research takes into account the unique challenge faced by NPOs of working to maintain an intrinsically motivated workforce while undergoing an ICT-induced change brought about as a result of the introduction of NPM practices. By focusing on the dynamic mutual interaction of an organisational change initiative and the intrinsic motivation of the workforce, the results of this research will enable organisations to explore, analyse and perform the necessary organisational change processes to encourage adoption and use of ICT whilst working to maintain and possibly enhance their intrinsically motivated workforce.

## Chapter 3. Literature Review

### 3.1 Introduction

This research project investigates methods of enabling Information Communication Technology (ICT) deployment and increasing technology acceptance, together with the consequent organisational change required within the non-profit sector, which typically has more intrinsically motivated staff (as outlined in Section 2.3).

This Chapter explores the themes of ICT acceptance, organisational change and worker motivation – which form the foundation for this research project – from the perspective of four disciplines: Information Systems, psychology, management and economics. Figure 3-1 provides an overview of the synthesis of topics and fields to be explored.



**Figure 3-1: Synthesis of Topics and Fields explored in this literature review.**

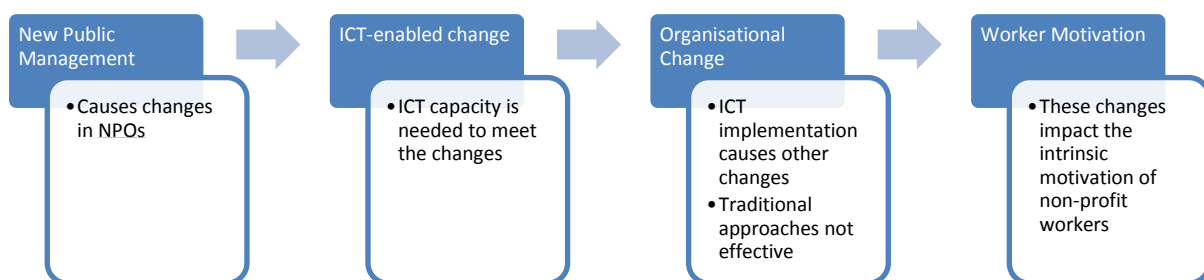
Chapter 2. showed how non-profit organisations (NPOs) have had to change the way they operate as a result of the public sector's strategic re-conceptualisation of its role in and responsibility for delivering social services to the community. Governments have outsourced social services by means of a competitive tendering process (brought about by New Public Management (NPM) practices) which has created increased competition from the private sector for NPOs. The push to outsource social services has resulted in accountability for service provision moving from government itself to suppliers (i.e. NPOs). NPOs which provide social services now face multiple compliance burdens, excessive direction from governments in the way the services are provided; and an increase in work pace, volume and intensity. In effect, this radical re-conceptualisation of social service provision has increased the level of bureaucracy within NPOs and is gradually forcing them to become more like their private sector counterparts as they compete to deliver social services.

The increased bureaucracy has meant a concomitant increase in management control over processes within NPOs which, in turn, has led to major changes in the way these organisations deliver social services – including more formal governance structures and the adoption of professional management practices from the private sector – which have resulted in the standardisation and commercialisation of services. Private sector business practices, however, do not always match NPOs’ authority structures and community purpose. NPOs prefer to have control over the way/s in which they deliver their services (their processes) and their community purpose (their mission); and these are strong motivating factors for NPO management and workers.

As Chapter 2. has already outlined, workers in the non-profit sector are more intrinsically than financially motivated, with a willingness to accept lower salaries and less prestigious physical environments in return for greater autonomy and self-fulfilment (worker satisfaction). It is this motivation which is being eroded by the changes currently underway in the non-profit sector: the corporatisation of NPOs and the standardisation of services have led to deskilling of staff and a loss of worker control and integrity. NPOs have traditionally been participatory and inclusive in the way they deliver their services and have previously been able to control their internal processes. The changes brought about by government-funded social service delivery, however, have eroded NPOs’ control over their processes as these organisations become ever-more professionalised.

NPO management teams are aware of the need to develop enhanced management information system skills in order to document measurable outcomes to satisfy government funding requirements, yet they are unable to catch up with the needed pace of ICT adoption because of funding and skills resource limitations. The implementation of a new ICT and changes to the service delivery process further compound the problems faced by NPOs, which are struggling to blend the fundamental changes facing the service delivery environment with their desire to maintain as much control as possible over their processes to keep their intrinsically motivated workforce happy.

Implementing any ICT into any organisation invariably leads to additional organisational changes to such things as work processes and job design. The impact of these changes is, however, greater for NPOs because of the differences in their mission, their structure and the motivation of their workers. The intrinsic motivation of non-profit workers, in particular, is essential to the effectiveness of the non-profit workforce. Figure 3-2 provides an overview of the inspiration for this research project.



**Figure 3-2: Inspiration for the Research**

Figure 3-2 highlights the need for a different approach to technology acceptance and change implementation that will be more effective for non-profit organisations, ensuring that at the very least staff motivation is maintained and, at best, this motivation can be used to drive the organisational change process.

Drawing on the inspiration of the research (represented in Figure 3-2) at this point it is useful to revisit the 3 fundamental research questions driving this study:

1. What is technology acceptance and how important is motivation for technology acceptance?
2. What is motivation and how does organisational change affect it?
3. What change management interventions are autonomously supportive and are these likely to result in increased acceptance of ICT-enabled organisational change?

These research questions have been further analysed and are represented pictorially below in Figure 3-3, thus fleshing out the inspiration of the research into definable fields for the literature review. This diagram will be used throughout the rest of this chapter to guide the reader through the synthesis of the topics, while illustrating how each section is linked to the others.



**Figure 3-3: Definable sections of the literature review**

The remainder of this Chapter is structured as follows:

- Section 3.2: the importance of understanding technology acceptance and the role of motivation as a crucial underlying factor;
- Section 3.3: a review of worker motivation consisting of:
  - an overview of the most easily recognisable motivation theories grouped as mechanistic, cognitive and organismic (need);
- Section 3.4: an explanation of autonomous motivation encompassing extrinsic and intrinsic motivation; and an overview of the undermining effects of extrinsic rewards on intrinsic motivation – specifically looking at Motivation Crowding Theory;
- Section: 3.5: a discussion about motivation, satisfaction and performance as measurements of worker motivation;
- Section 3.6: a brief review of the importance of motivation in organisational change;
- Section 3.7: how organisational change relates to technology acceptance;
- Section 3.8: a review of organisation change, change management and management theories.

## 3.2 Technology Acceptance



“Technology continues to change the world, although today the scope and rate of such change is greater than ever – and the need to understand technology and its adoption, implementation, and use has never been more important” (Lucas et al. 2007, p. 209).

Despite the existence of an extensive body of published research into innovation, implementation and diffusion (see, for example: Briggs et al. 2008; Cooper and Zmud, 1990; Luo et al. 2010; Oakland and Tanner 2007; Wagner and Piccoli 2007) ICT implementation success rates remain low (Legris et al. 2003; Venkatesh and Bala 2008; Venkatesh and Goyal 2010). In this thesis, the term ‘system implementation success’ is defined as:

“a high quality process of preparing the target user community for use of the system (often called “change management”) and/or a high quality “change” outcome, namely that the intended users...adopt the system, use it as expected, and/or use it with the desired effects.” (Markus and Mao, 2004, p. 525).

The low success rates identified in the literature could possibly be due, at least in part, to the fact that although the acceptance of ICT plays a crucial role (Hsiao et. al. 2015) in implementation projects and both implementation and acceptance are recognised as important IS research streams (Venkatesh et al. 2003), they “appear to occupy different research silos with few linkages existing between them” (Barki et al. 2008, p. 269).

Nonetheless, Schwarz and Chin (2007) argue that Diffusion of Innovation (DoI) theory (used by researchers studying implementation) and the Technology Acceptance Model (TAM) (used by researchers studying ICT acceptance) have significant commonality, with usage being the final indicator of success in both theoretical approaches. Burton-Jones and Straub (2006) also noted that system usage plays a major role in both the implementation and acceptance research streams.

### 3.2.1 ICT Implementation: Innovation and Diffusion

The ICT implementation research stream is primarily based on the innovation and diffusion literatures (Cooper and Zmud, 1990; Lucas et al. 2007); Lucas et al. (2007) outline how the ICT implementation research stream has developed over time to become integrated with the innovation and diffusion research streams. These authors also discuss briefly how and when the acceptance research stream came about. Table 3-1 provides a brief summary of this evolution (for more detail see Lucas et al. (2007)).

**Table 3-1: Evolution of Implementation Research (adapted from Lucas et al. 2007)**

<b>Implementation Research Stream</b> <ul style="list-style-type: none"><li>• Began early 1970s to address ICT implementation problems and prospered well into the 1980s.</li><li>• Roots in the field of management science, bringing together design and use of ICT.</li><li>• Proved to be deficient in several respects; failing to establish a unifying theory bringing various factors of implementation together &amp; primarily addressed the individual acceptance or rejection of systems.</li><li>• Has succeeded in identifying factors associated with successful implementation and process of implementation.</li></ul>
<b>Innovation and its Diffusion in the ICT Context</b> <ul style="list-style-type: none"><li>• Closely related to the Implementation theme.</li><li>• Existing fragmented models of implementation could be unified with an innovation perspective.</li><li>• 1990s repositioned implementation research in terms of innovation theory to complement diffusion.</li><li>• This innovation perspective still lacks a unifying theory or even a small assemblage of sub-theories that complement one another.</li></ul>
<b>Individual Adoption Acceptance and Use</b> <ul style="list-style-type: none"><li>• TAM emerged in the late 1980s explaining individual use and adoption of ICT innovations.</li><li>• This model and its descendants (e.g. TAM2, TAM3 and UTAUT) are not focused on the provision of practical advice for management attempting to implement new technology.</li></ul>

This thesis is concerned with ICT implementation and with the adoption, acceptance and use of ICT as part of an organisational change project. Examples of two ICT implementation methods drawing on a number of earlier models from other authors – Kwon & Zmud’s six stage model and LaPointe & Rivard’s IS implementation outcomes – are described below. While these models will not be developed further in this thesis, they are relevant examples of ICT implementation models which have incorporated existing organisational change models. In particular, LaPointe and Rivard’s model demonstrates the need to consider and use different theories and models depending upon the level of analysis to be undertaken.

#### *Six Stage Model of the ICT Implementation Process*

In 1987 Kwon and Zmud created a six stage model of the ICT implementation process (Cooper and Zmud, 1990) drawing on Lewin’s three step change model (for more detail see Section 3.8.3) from the organisational change literature, combined with terms from the innovation and diffusion literature. The stages consist of: Initiation; Adoption; Adaptation; Acceptance; Routinisation and Infusion as applied to Lewin’s three step change process outlined in Table 3-2.



**Table 3-2: ICT Implementation Process (adapted from Cooper and Zmud, 1990)**

Kwon & Zumd's Six Stage Model	Initiation	Adoption Adaptation	Acceptance Routinisation Infusion
Lewin's Three Step Change Process	Unfreezing	Change	Freezing

In addition to its similarities with Lewin's model, the Kwon & Zmud model also has similarities to Kotter's eight-step model and Oakland and Tanner's organisational change framework, as outlined in Section 3.8.3. For example the initiation, adoption and, to a certain degree, the adaptation stages in the Kwon & Zmud model can be expressed in terms of the first cycle (readiness for change) of the organisational change framework with the final stages of acceptance, routinisation and infusion being similar to the second cycle (implementing change) of the organisational change framework.

### ***IS Implementation Outcomes***

LaPointe and Rivard (2007, p. 89) "propose an alternate-template theory of IS implementation outcomes that takes into account all three levels of analysis, their respective outcomes, and the time dimension". The 'outcomes' for LaPointe & Rivard are: emergence; use; resistance and routinisation. These authors argue that their theory will provide researchers with a holistic understanding of IS implementation – and they review and choose three models at each level of analysis within their study to explain individual use, group resistance and organisational adoption (in terms of emergence and routinisation) as shown in Table 3-3.

**Table 3-3: Models selected for each level of analysis in LaPointe and Rivard (2007)**

	<b>Individual Use</b>	<b>Group Resistance</b>	<b>Organisational Adoption</b>
Model Chosen	Agarwal and Karahanna's Cognitive Absorption (CA) is preferred over the technology acceptance model	Markus' Political Variant of Interaction Theory (PVIT)	Mintzerg's Organisational Configurations Model (OC)

LaPointe & Rivard then apply these three models to the four-phase Enterprise System (ES) experience model (which is composed of: project chartering, configuration & roll out, shake down; and onward & upward) as a way of explaining each outcome (see LaPointe and Rivard, 2007).

Diffusion and innovation theories are seen as taking a macro perspective, focusing on the organisation (Straub, 2009; Venkatesh et al. 2003), whereas adoption theories are considered to be a micro-level analysis of individuals choosing to accept or reject a particular innovation (Straub, 2009; Venkatesh et al. 2003). Morris and Venkatesh (2010) argue that individual-level research within the technology-based organisational change literature is limited, despite a contrary view from Malhotra and Galletta (1999) who believed that a major (if not the major) key to successful ICT implementation is the fostering of favourable user attitudes to the change and to ICT more generally, leading to positive acceptance behaviour. Rogers (2003, p. 115) extends this view, believing the diffusion research stream should expand its "understanding of motivations for adopting an innovation".

The research reported in this thesis is focused on the ‘people’ approach to change, as opposed to the technological approach where the major issues are the processes needed to implement an ICT-enabled organisational change and workers’ reactions to these changes (Cooper and Zmud, 1990), particularly with respect to worker motivation. This ‘people’ approach requires a micro-level analysis or, from LaPointe and Rivard’s model above, an individual use level of analysis paying particular attention to the acceptance of and resistance to ICT and change which may occur during an ICT-enabled organisational change project.

### 3.2.2 Defining Technology Acceptance

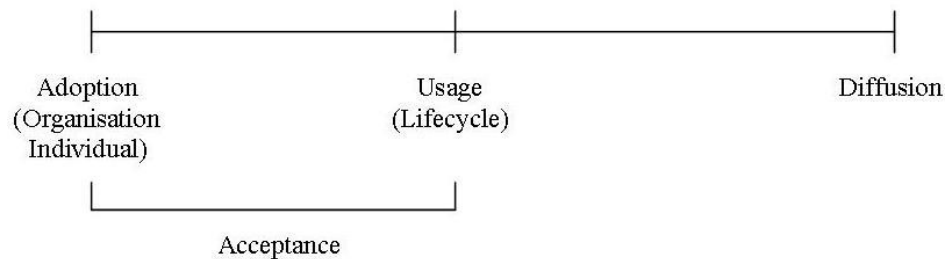
User acceptance is a critical factor in ICT implementation projects, regardless of whether the ICT is an enabler of change in and of itself or part of an organisational change project. Yet the implementation and acceptance research streams rarely overlap and “...few studies have examined potential linkages between ICT implementation tactics or strategies and ICT acceptance research models” (Barki, et al. 2008, p. 278), although ICT implementation strategies such as user participation, training and support can influence acceptance outcomes (Ali, et al. 2016; Barki et al. 2008; Meier et al. 2013). Both Schaper and Pervan (2005), and De Toni et al. (2015) support this view, arguing that the implementation context and process plays a major role in influencing user acceptance and implementation success. Implementation strategies could also be used as antecedents to acceptance (Barki et al. 2008).

Within the implementation and acceptance research streams the terms adoption, acceptance and use are often used interchangeably, or as proxies for one another, despite their very different meanings (Schwarz and Chin, 2007; Malhotra, 1999). Malhotra (1999) argues that adoption and acceptance are two different things; and that acceptance should not be used as a proxy for usage. This author believes that adoption is a process of sense-making in which psychological acceptance of technology is gained through a personal construction view, (i.e. “the adoption of a specific technology is dependent upon the extent to which the adopter finds it personally relevant or meaningful” (Malhotra, 1999, p. 98)). Schwarz and Chin (2007) note that ICT acceptance is generally viewed as being identical with ICT usage (as is the case with TAM, for example) and that this leads to a failure to consider “alternative notions of acceptance” (Schwarz and Chin, 2007, p. 233). Schwarz et. al., (2014, p.74) offer an alternative approach to TAM “by proposing a process-orientated model of IT acceptance”. They argue that acceptance is a process comprising five psychological modes of acceptance:

- 1) **To receive:** the psychological state of taking the technology without question;
- 2) **To grasp the idea:** the psychological state of fully comprehending the intentionality (e.g. functionality and design) of the technology;
- 3) **To assess the worth:** the psychological state of evaluating the value and desirability of the technology to me;
- 4) **To be given:** the psychological state of an individual willing to adapt their routines to what was required by the technology; and
- 5) **To submit:** the psychological state of the individual surrendering to the intentionality of the technology (Schwarz et al. 2014, p. 75).

These authors then identify antecedents to the process of acceptance, consisting of such things as user participation, training and perceptions of the ICT, such as usefulness, which would contribute to how a user progresses through the psychological modes of acceptance (Schwarz and Chin, 2007).

According to Lucas et al. (2007) and Schwarz and Chin (2007), acceptance has its own process beginning with initial adoption (initially by the organisation and then by the individual), with the final indicator being usage (to varying degrees). This acceptance then leads to diffusion which “is essentially a social process in which subjectively perceived information about the... (innovation)...is communicated from person to person” (Rogers, 2003, p. xx). As illustrated in Figure 3-4 the term acceptance, encompassing individual adoption and usage, will continue to be used throughout this thesis.



**Figure 3-4: Process of Acceptance**

The technology acceptance model has been a dominant influence within the acceptance research stream (Anderson, 2016; Lee et al. 2003; Malhotra et al. 2008; Marangunić and Granić, 2015; Wu and Lu, 2013) with implications for researchers investigating the implications of intrinsic motivation on user acceptance (including the present project).

Davis (1989) initially recognised the importance of having users accept and use technology and found very few valid measurement scales for predicting acceptance and how acceptance related to use. In the original Technology Acceptance Model (TAM) Davis proposed that perceived usefulness (PU) and perceived ease of use (PEOU) were fundamental determinants to explain user behaviour (Davis, 1989) and provided the following definitions for each:

- PU is “the degree to which a person believes that using a particular system would enhance his or her job performance” (Davis, 1989, p. 320)
- PEOU is “the degree to which a person believes that using a particular system would be free of effort” (Davis, 1989, p. 320)

Davis (1989) argued that these determinants could be used by practitioners to predict a system’s acceptability and to diagnose why a system was not being accepted – and could lead to appropriate interventions such as training, education and user involvement being used to improve user acceptance.

TAM was adapted from the Theory of Reasoned Action (TRA) (Davis et al. 1992), an intention model used to predict and explain consciously-intended behaviours (Ajzen, 2001; Davis et al. 1992) whereby “people act in accordance with their intentions and perceptions of control over the behaviour...intentions...are influenced by attitudes toward the behaviour, subjective norms and perceptions of behavioural control” (Ajzen, 2001, p. 43). TRA and, thus, TAM are consistent with the cognitive (expectancy) theories of motivation (Ajzen, 2001; Venkatesh, 2000), whereas Meier et al. (2013) argue that current acceptance models are based on mechanistic (a stimulus/response association) assumptions which, as Section 3.3 will argue in more detail, do not address either the varying types of motivation or the energisation of motivation.

TAM has evolved over the years from the original theory of that name (Davis et al. 1989) to TAM2 (Venkatesh 2000), the Integrated Model of Technology Acceptance (IMTA) (Venkatesh, et al. 2002), the Unified Theory of Acceptance and Use of Technology (UTAUT) (Venkatesh et al. 2003) and, more recently, TAM3 (Venkatesh and Bala 2008), UTAUT2 (Venkatesh et al. 2012), EBTAM (Leyton et al. 2015) and finally a framework of technology adoption and use has been developed based on a synthesis and review of UTAUT by Venkatesh et al. (2016) . For a history of the evolution of TAM see Lee et al. (2003); Venkatesh et al. (2003) and a literature review by Marangunić and Granić (2015).

Despite its evolution, TAM and all its variations continue to use PU and PEOU as the two principal determinants (each with a number of variables) of a user’s behavioural intention to accept and use technology. Both these variables have been used as examples of extrinsic and intrinsic motivation respectively by a number of researchers (Davis et al. 1992; Hwang 2005). Davis et al. (1992) incorporated motivation by adding the ‘enjoyment’ variable (which is described by Gerow et al. 2013, p.361) as the “Motivational Technology Acceptance Model or MTAM”). Venkatesh et al. (2002) also attempted to incorporate intrinsic motivation as an additional determinant of TAM in their IMTA.

Other recent examples of attempts to incorporate intrinsic motivation into the acceptance research stream include: Fagan et al. (2008) who uses the IMTA and Self Determination Theory to incorporate intrinsic motivation; Luo et al. (2010) who combine constructs from TAM and Innovation Diffusion Theory to create a model to explain user adoption; Park (2010) who integrates TAM with a gratifications framework to explore user motivation; Singh and Holmtrom (2015) who use Maslow’s hierarchy of needs viewpoint to investigate Building Information Modelling adoption and, finally, Torres and Sidorov, (2015) who integrate the concept of task-technology fit with SDT. Similarly, Venkatesh et al. (2012) have included hedonic motivation “conceptualised as perceived enjoyment” (Venkatesh et al. 2012; p.161) as a determinant in UTAUT2. Motivation in the acceptance research stream continues to be a mis-represented construct as reported in Venkatesh et al. (2016) where researchers have integrated UTAUT with other models: in one study effort expectancy is used as construct of intrinsic motivation, whereas in another study it is viewed as a construct of extrinsic motivation.

Other studies (Lin and Bhattacharjee, 2010; Gerow et al. 2013; Lowry et al. 2013; Wu and Lu, 2013) have focussed on intrinsic and extrinsic motivation in hedonic application use (pleasure, fun) and utilitarian application use (productivity, practical). Both Gerow et al. (2013) and Wu and Lu (2013) have conducted meta-analyses of existing studies. While Gerow et. al. (2013, p.360) found that “intrinsic motivation is equally relevant for predicting intentions toward using and actual use of both hedonic and utilitarian systems”; Wu and Lu (2013) found that intrinsic motivators are more important than extrinsic motivators in the context of hedonic application use. Lowry et al. (2013) proposed the Hedonic-Motivation System Adoption Model (HMSAM), in preference to extending the TAM, although they used the “more expansive intrinsic motivation construct of CA” (Cognitive Absorption) (Lowry et al. 2013, p.632) in place of joy. Briefly, CA was introduced by Agarwal and Karahanna (2000, p. 666) as a conceptual construct where it is presented as “an intrinsic motivation related variable” consisting of several sub-constructs: Control; Curiosity; Joy; Focused Immersion; and Temporal Dissociation which, the authors say “represent different forms of intrinsic motivation” (Agarwal and Karahanna, 2000, p. 673). While “control”, for example, is an important factor in intrinsic motivation it is not a form of intrinsic motivation in itself, an issue which is discussed more fully in Section 3.4.

Almost all these studies, however, base intrinsic motivation on TAM’s definition of motivation, which equates intrinsic motivation with playfulness and/or enjoyment. Playfulness, however, is not the same thing as intrinsic motivation – as already discussed in Section 1.1.3 and further clarified in Section 3.4.

Because of TAM’s dominant influence in the technology acceptance literature, the majority of studies into user motivation continue to misrepresent the motivation concept in this field. The present study offers a different perspective on this important issue. The discussion which follows and, particularly, the analysis in Section 3.3 offers a very different approach to user motivation – and this is one of the major contributions to both theory and practice made by this thesis.

### 3.2.3 Technology Acceptance and Motivation



The concept of intrinsic motivation was defined as part of TAM by Davis (1989) who called for more research into intrinsic motivation as perhaps being a variable for PU and PEOU. This is the point at which Davis first equates ease of use with enjoyment (fun) and thus intrinsic motivation, based on a paper titled “Fun” by Carroll and Thomas (1988) who stated that fun (derived from playing games) could be regarded as an intrinsic reward for users (although these authors did argue that a clarification between fun and ease of use was essential to understanding and improving software).

Davis et al. (1989), using Bandura’s self-efficacy theory (see Section 3.3.2), then argued the easier a system is to use the greater will be an individual’s self-efficacy and personal control in carrying out the behaviour required to use a system. Here efficacy was seen to influence motivation and was theorised as a major factor underling intrinsic motivation. However, as will be argued in Section 3.3.2 self-efficacy fails to acknowledge intrinsic motivators. Davis et al. (1989), again citing Carroll and Thomas, concluded that the direct relationship between PEOU and attitude to using a system was “meant to capture this intrinsically motivating aspect” of PEOU (Davis et al. 1989, p. 987).

As argued in Section 3 and above TAM simplifies and trivialises the concept of motivation by failing to recognise the fundamental needs underlying behaviour. It assumes that people are passive (Malhotra, 1999) and reactive and have only extrinsic motivation to use a system, equating intrinsic motivation simply as enjoyment and/or computer playfulness (Davis et al. 1989; Venkatesh, 2000) which, will be further demonstrated in Section 3.4, are actually consequences of intrinsic motivation, rather than being motivators in and of themselves.

One of the most recent versions of TAM, TAM3 (Venkatesh and Bala 2008), is based on a theoretical framework composed of four categories which the authors say is a synthesis of all previous TAM research. Each of the four categories: individual differences; system characteristics; social influence; and facilitating conditions is made up of its own variables based on the two fundamental determinants of PU and PEOU as demonstrated in Table 3-4.

**Table 3-4: Categories and Variables of TAM3 (adapted from Venkatesh and Bala, 2008)**

<b>Categories</b>	<b>Individual Differences</b> (including, personality/ demographics)	<b>System Characteristics</b> (salient features of system)	<b>Social Influence</b> (social processes & mechanisms)	<b>Facilitating Conditions</b> (organisational support)
<b>Variables</b>	Computer Self-Efficacy (PEOU)	Job Relevance (PU)	Subjective Norm (PU)	Perception of External Control (PEOU)
	Computer Anxiety (PEOU)	Output Quality (PU)	Image (PU)	
	Computer Playfulness (PEOU)	Result Demonstrability (PU)		
		Perceived Enjoyment (PEOU)		
		Objective Usability (PEOU)		

The authors also argue that “perceived usefulness is an instrumental belief that is similar to extrinsic motivation and is a cognition (as opposed to emotion) regarding the benefits of using a system.” (Venkatesh and Bala 2008, p. 281). However, both these fundamental determinants (PU and PEOU) incorporate a number of intrinsic motivational variables and it is misleading to describe PU as an ‘example’ of extrinsic motivation. This illustrates how TAM fails to treat motivation effectively, which has led to the limited understanding of motivation within the IS field – the limitation of which is, in fact, demonstrated by TAM3 itself.

TAM3 (as with the previous versions of TAM) is based on the assumption that “the determinants of perceived ease of use represent several traits and emotions, such as computer self-efficacy, computer playfulness, and computer anxiety” (Venkatesh and Bala 2008, p. 280). In this thesis, however, the TAM variables (represented as traits, emotions and cognitions – essentially a list of drives) are associated with Maslow’s (1970) basic needs hierarchy, outlined in greater detail in Section 3.3.3, as a simplified way of explaining user behaviour. As an example, it has been argued that emotion and cognition serve motivation that is, according to Baumeister (2016, p. 3) “Emotion provides subjective feels that provide feedback about motivationally relevant events, such as feeling happy upon satisfying some basic need”.

Lee et al. (2003) provides a summary of the variables used in TAM and their definitions, from which three variables have been selected from each of PU and PEOU as represented in TAM3 to demonstrate (in Table 3-5) the underlying motivations of these variables. This will enable an understanding of user motivations to be based on these basic needs, rather than on what seems like an increasingly expanding list of variables (drives and emotions).

**Table 3-5: TAM Variables as Basic Needs (adapted from Lee et al. 2003)**

<b>TAM Variable</b>	<b>TAM Definitions</b>	<b>Basic Needs (Maslow)</b>
Self Efficacy (PEOU)	The belief that one has the capability to perform a particular behaviour	Esteem (competency)
Computer Anxiety (PEOU)	An individual’s apprehension, or even fear when he/she is faced with the possibility of using computers	Safety (freedom from anxiety, fear)
Perceived Enjoyment (PEOU)	The extent to which the activity of using a specific system is perceived to be enjoyable in its own right, aside from any performance consequences, resulting from system use.	This is an emotion resulting from experiences of competence (Esteem) & autonomy (Self-Actualisation)
Result Demonstrability (PU)	The degree to which the results of adopting/using the IS innovation are observable and communicable to others	Belongingness & Love (belong) Esteem (status, recognition)
Subject Norm (PU)	Person’s perception that most people who are important to him/her think he/she should or should not perform the behaviour in question	Belongingness & Love (belong) Esteem (status, respect)
Image (PU)	The degree to which use of an innovation is perceived to enhance one’s image or status in their social system	Esteem (status, respect)

As Table 3-5 shows, most of the variables (drives and emotions) of TAM are influenced by intrinsically motivated behaviour, based on the four most relevant needs:

- Safety – categorised as security; stability; dependency; protection; freedom from fear, from anxiety and chaos; need for structure, order, law, limits and so on (Maslow, 1970);
- Belongingness and Love – a tendency to want to join, to belong, overcoming feelings of aloneness, alienation, and strangeness; both giving and receiving these needs (Maslow, 1970);
- Esteem – the need for self-esteem and esteem for and from others classified into two subsets: (1) strength, achievement, adequacy, mastery, competence, independence and freedom; and (2) reputation or prestige, respect (from others), status, fame, dominance, recognition, appreciation (Maslow, 1970);
- Self-Actualisation – self-fulfilment, autonomy (Maslow, 1970).

Since part of the key research objective of this thesis is to identify and evaluate how an ICT-enabled organisational change affects workers' intrinsic motivation and thus their behaviour, it is necessary to investigate the various types of motivation possible. Redefining the motivation concept in the IS field and identifying the basic needs underlying TAM's variables will enable a review of existing participative techniques based on these motivational needs (as outlined in Section 3.8.4) to create facilitating conditions to meet those needs. This, in turn, will lead to enhanced adoption and use of information systems and technology during an ICT-enabled organisational change while simultaneously maintaining the intrinsic motivation of staff.

### 3.3 Schools of Thought on Motivation: A Broad Review of the Literature



“The concept of motivation useful for the psychology of human behaviour can never be completely objectified...There is simply no objective phenomenal reality that can be identified as a motive” (deCharms, 1968, pp. 257-258).

This quotation highlights the complexities surrounding the topic of motivation, which will be demonstrated in this Section by highlighting a very limited number of the extant motivation theories. Motivation is driven by many needs and desires (Ambrose and Kulik 1999) which originate both from within a person (intrinsically) and from external influences (extrinsic motivators). Baumeister (2016, p. 1) states that “motivation responds to the local environment but may also adapt to it, such as when desires increase after satiation or diminish when satisfaction is chronically unavailable” and has called for the generation of a *general theory* of motivation. Various motivation theories have been used in management to understand and encourage workers to be more productive (Fisher, 2009) as will be demonstrated in this section.



There are many motivation theories offering varying views of motivation which are generally based on underlying assumptions about organisms (human beings) which will be discussed below. These theories of motivation range from mechanistic in which a stimulus/response association (Deci and Ryan, 2000) is used to explain the direction of behaviour, to organismic and cognitive where a choice/decision-making association explains the direction of behaviour (Deci and Ryan, 1985; Latham, 2007).

Ambrose and Kulik (1999) demonstrated the diversity of motivational theories by summarising over 200 studies of work motivation from 1990 to the end of 1997 associated with seven traditional motivational theories consisting of: (1) motives and needs; (2) expectancy theory; (3) equity and justice theory; (4) goal-setting; (5) cognitive evaluation theory; (6) work design; and (7) reinforcement theory.

This study is really only concerned with a subset of these theories, i.e. motives and needs. Expectancy theory and goal-setting motivational theories are, however, included here as the most relevant possible alternative theories for this topic, because it is crucial to understand why this thesis argues that TAM has a simplistic view of motivation. The inclusion of these additional theories will demonstrate the completeness of the review from the field of psychology and will allow me to explain why these theories have been discounted for this study.

Although only some of the material in this section is relevant or useful to the ultimate presentation of the theoretical foundation of this project (and thus will not be developed in the remainder of the thesis) it is nonetheless needed here to provide a foundation for and to explain the body of literature.

### **3.3.1 Mechanistic Theories**

This section provides a very brief overview of Mechanistic Theories as the origin of the “scientific study of motivation” (Graham and Weiner, 1996, p.65) According to Deci and Ryan (1985) and Latham (2007), a mechanistic theory of motivation uses a stimulus/response association to explain the direction of behaviour. Organisms are viewed as being passive and reactive (Deci and Ryan, 1985) and motivation is primarily developed through reinforcement such as learning (Deci and Ryan, 1985; Latham, 2007).

In the early 20<sup>th</sup> century the view was that workers were only motivated by money (Latham, 2007). One of the classical management theories of that time was termed ‘scientific management’. Frederick Taylor first used the term in *The Principles of Scientific Management* (1911) which has its roots in economics and engineering (Burke, 2002; Taylor, 1947, Wagner-Tsukamoto, 2007). This is commonly referred to as Taylorism in the literature (see, for example: Smith et al. 2003; Wagner-Tsukamoto, 2007).

Very briefly, scientific management assumes workers would be satisfied if they were given a set task each day to be performed in a given time period. If the workers achieved this goal, then wages would be increased. This increase in wages would motivate the workers to work much harder and more efficiently (Taylor, 1947). A few years later Frank and Lillian Gilbreth released *Applied motion study* (1917) which focussed on removing unnecessary work processes which “would naturally speed up the workers” (Helms-Mills et al. 2009, p.25). Both Taylor and the Gilbreths’ were exploring, through scientific study, ways of increasing productivity through simplifying technical aspects of work (Helms-Mills et al. 2009). These authors viewed organisations as being machine-like and systemic in nature (Burke, 2002, Wagner-Tsukamoto, 2007).

As already explained in Section 1.1.4, however, people are in fact (pro)-active rather than passive. In short, these mechanistic theories disregard the concept of intrinsic motivation and are therefore not appropriate for use in this study. They are thus excluded from the foundation being developed in this chapter to explain motivation.

### **3.3.2 Cognitive Theories**

While this research project is not directly concerned with cognitive motivation theories (because we are interested in the ‘why’ aspect of motivation rather than the ‘how’) their brief presentation here is used for comparison purposes and completeness of foundational study, since these theories are now more dominant (Baumeister, 2016) in the motivation literature. Examples of these theories include Vroom’s Expectancy Theory, Bandura’s Self-efficacy Theory; and Locke and Latham’s Goal Setting Theory.

Cognitive theories have previously been considered to be relevant for technology acceptance research although they fail to recognise the underlying motivations for technology acceptance essential for the present research project. Behavioural theories such as the Theory of Planned Behaviour and the Theory of Reasoned Action (TRA) (the latter of which was adapted to create TAM - see Section 3.2.2) are consistent with cognitive theories. These theories have been based on expectancy-value models (Ajzen, 2001) consistent with the likes of Vroom’s expectancy theory (Bandura, 1997) as discussed briefly below.

#### ***Expectancy Theory***

Expectancy theory was the “first cognitive broad range theory of motivation” (Latham, 2007, p. 45). Vroom (1964, p. 6) used “the term motivation to refer to processes governing choices made by persons or lower organisms among alternative forms of voluntary activity”. This theory was then used as a framework to explain nearly all employee behaviour (Ambrose and Kulik, 1999; Latham, 2007). It consists of three elements: expectancy (the belief that effort leads to performance); instrumentality (the belief that performance leads to rewards); and valence (perceived value of the rewards or outcomes of performance) (Locke and Latham, 1990). This theory also has five criteria: performance; effort; choice (behavioural variables); intention; and preference (attitudinal variables) (Ambrose and Kulik, 1999).

In 2003 Vroom explained his view of expectancy theory – as reported in Latham, (2007, p. 46):

“In short expectancy theory operationalises motivation in terms of four components. The first is effort. The second is the intrinsic valence in the outcome of high performance emanating from effort, the degree to which effective performance is desired for its own sake. Third, there is instrumentality – one’s perceived causal connection between one’s performance and the rewards one expects to receive as a result of this performance. Finally there is the valence to the employee of the rewards”.

This explanation makes it clear that expectancy theory addresses the ‘what’ (the processes) of motivation but not the ‘why’ (Deci and Ryan, 1985) and is thus the reason why expectancy theory is not relevant to this research project. It is consistent with most other cognitive theories in that motivation is influenced by the forethought of outcomes and behaviour is chosen based on these outcomes (Deci and Ryan, 1985; Latham, 2007).

### ***Self-Efficacy Theory***

Bandura (1997, p. 122) argues that “most human motivation is cognitively generated...people motivate themselves and guide their actions anticipatorily through the exercise of forethought”. This theory only considers purposive action – in that people are motivated to act when they perceive they have the ability (i.e.: ability to organise and carry out an act, also known as self-efficacy) to attain a desired goal (Bandura, 1997; Deci and Ryan, 2000; Latham, 2007). There is no acknowledgement of intrinsic motivators within this theory.

Self-efficacy theory distinguishes three forms of cognitive motivation: cognised goals; outcome expectancies; and causal attributions, which is the perceived causes of success and failure (through such things as personal capability and perceived task demands) (Bandura, 1997). In these types of cognitive motivation we see that this theory “does not distinguish between autonomous and controlled behaviours” (Deci and Ryan, 2000, p. 257) which is the main purpose of this research. Self-efficacy theory is similar to goal-setting theory through the focus on cognised goals (Latham, 2007).

### ***Goal-Setting Theory***

Georgopoulos et al. (1957) was one of the first to hypothesise a path-goal approach to productivity, whereby it was recognised that people have needs and would seek to satisfy those needs by choosing available goals. These authors did, however, stipulate that this path-goal approach should be used with other approaches because it neglected the ‘non-rational’ (or intrinsic) aspects of human behaviour. Locke and Latham’s goal-setting theory does not consider these non-rational aspects of human behaviour. In fact, Latham (2007) admits that goal-setting theory is only focussed on conscious goals and as such this has been recognised as a limitation of this theory.

Very briefly, goal-setting theory maintains that people are motivated and directed to perform a task by cognized goals (both assigned and self-set) that they are trying to achieve when completing that task (Bandura, 1997; Locke and Latham, 1990). According to Ambrose and Kulik, (1999) and Locke and Latham, (1990) several moderators need to be applied to this theory consisting of:

- Individuals or groups must accept the goal (if it is assigned) and remain committed to achieving it;
- Feedback must be provided which allows individuals or groups to track their progress toward attaining the goal, thus motivating high performance; and
- Self-efficacy – “individuals must have the ability to reach or approach the goals” (Locke and Latham, 1990, p. 241).

Values play an important role in goal commitment, for example Locke and Latham (1990) argued that if people valued money then using a substantial amount of money as an incentive would enhance goal commitment. This view has been studied widely in the literature (see Ambrose and Kulik, 1999).

This very brief review shows that cognitive theory does not address the energisation of motivation. Rather, it discusses the process of motivation through goal-setting – by linking goal-specificity, goal commitment, and goal difficulty to task performance (Ke and Zhang, 2009) – and is therefore not relevant to this study.

Section 3.3.3 will introduce and discuss ‘organismic’ theories, which have similarities with cognitive theories as both use the choice/decision association to explain direction of behaviour (Deci and Ryan, 1985; Latham, 2007). The differences, however, between these two groups of theories are that organismic theories address the energisation (or why) aspect of motivation (Deci and Ryan, 1985) and that ‘needs’ provide the “basis for energization and direction of action” (Deci and Ryan, 2000, p. 228), whereas most cognitive theories argue that forethought of outcomes (i.e. goal intentions) influences motivation (Bandura, 1997; Latham, 2007). Organismic theories assert that all behaviours are chosen based on future outcomes or reinforcements (Deci and Ryan, 1985).

### **3.3.3 Organismic (Need) Theories**

Although all the cognitive theories mentioned above have made valuable contributions to the study of motivation (Deci and Ryan, 1985; Ke and Zhang 2009; Latham, 2007) they do not address the types of motivation, such as intrinsic and extrinsic motivation, which organismic theories such as Self Determination Theory (SDT) have sought to achieve (Deci and Ryan, 2000; Ke and Zhang, 2009; Ryan and Deci, 2006) and which are discussed below.

The Organismic or Needs theories outlined in this section are those with which this study is most concerned. Understanding these theories is fundamental to fully appreciating Motivation Crowding Theory, which is part of the Framework of Ideas used in this research project.

Organismic (also known as ‘need’) theories use the choice–decision association to explain the direction of behaviour (Deci and Ryan, 1985; Latham, 2007). Needs may be defined “as innate, organismic necessities rather than acquired motives” (Deci and Ryan, 2000). As explained in Section 1.1.5 people are assumed to be active organisms, i.e. where the organism is volitional and initiates its own behaviour (they have intrinsic needs and physiological drives) (Deci and Ryan, 1985; 2000). It is therefore a combination of these theories which provide the focus for this research project and which will be developed in this thesis.

Examples of these theories include Maslow’s Hierarchy of Needs, Herzberg’s Motivation–Hygiene Theory; and Deci and Ryan’s Self-Determination Theory (discussed below). It should be noted that the assumption underlying these needs-based or organismic theories is that the stated needs are universal, (i.e. they are found in all people (Deci and Ryan, 2008; Latham, 2007)). According to Latham (2007) it is these needs which impel behaviour. Therefore,

“...implicit in Maslow’s and Herzberg’s theories is the assumption that one does not directly motivate another person, one creates an environment where people can motivate themselves.”  
(Latham, 2007, p. 39).

### ***Hierarchy of Needs***

Maslow (1970) argues that any classification of motivational life should be based on constant fundamental needs rather than trying to make a list of drives to explain behaviour; and that this should be incorporated into any motivational theory. This led to the development of his theory of human motivation – known as the ‘Hierarchy of Needs’, which is illustrated in Figure 3-5. Although this theory was first published in 1943 it went largely unnoticed until Maslow’s book was published in 1954 (Latham, 2007).

Maslow’s theory specifies the basic needs “that energise and direct behaviour” (Latham, 2007, p. 25) which all psychologically healthy people have to varying degrees and at varying times throughout their lives. Fisher (2009) asserts that these needs form the basis for motivating employees.



**Figure 3-5: Hierarchy of Needs**

Since this research is focussed on motivation to change and accept ICT it will be assumed that the basic physiological needs, such as food and rest, have been adequately satisfied. In this project we are only concerned with the remaining psychological and social needs as outlined below:

- Safety – categorised as security; stability; dependency; protection; freedom from fear, from anxiety and chaos; need for structure, order, law, limits and so on (Maslow, 1970);
- Belongingness and Love – a tendency to want to join, to belong, overcoming feelings of aloneness, alienation, and strangeness; both giving and receiving these needs (Maslow, 1970);
- Esteem – the need for self-esteem and the esteem for and from others; classified into two subsets (1) strength, achievement, adequacy, mastery, competence, independence and freedom and (2) reputation or prestige, respect (from others), status, fame, dominance, recognition, appreciation (Maslow, 1970);
- Self-Actualisation – self-fulfilment, autonomy (Maslow, 1970).

Table 3-5 has already categorised the underlying basic needs (as outlined above) of selected TAM variables, which allows us to base our understanding of technology acceptance on needs rather than variables.

Participative management theories, such as McGregor's Theory Y (discussed in Section 3.8.4), use Maslow's theory of motivation as a basis for understanding worker motivation (Deci and Ryan 1985; Gagne and Deci 2005; Maslow 1970; McGregor, 1960). Maslow's theory has also been used in prior technology adoption research. For example, Benson and Dundis (2003) integrated the hierarchy of needs with technology and training within the health care industry to understand and enhance employee motivation; and Soliman and Lapointe (2009) incorporated the hierarchy of needs with perceived usefulness (PU) from the Technology Acceptance Model to demonstrate that an innovation will be perceived as useful if the innovation can be perceived to meet a user's salient motivational needs. This demonstrates the usefulness and applicability of using motivation theories to design interventions which will influence workers' motivation and their resulting behaviour. Based on these theories, interventions can be used to enhance user motivation to accept change and to adopt and use technology.

### ***Motivation-Hygiene Theory***

A number of motivational theories are based on similar aspects of Maslow's basic psychological needs; one such theory is Herzberg's Motivation-Hygiene theory, also known as his two-factor theory. Following from Maslow's Hierarchy of Needs, Herzberg found that factors leading "to positive job attitudes do so because they satisfy the individual's need for self-actualisation in his work" (Herzberg et al. 1959, p. 114).

Herzberg et al. (1959) conducted a study of job motivation, collecting data about attitudes to jobs, factors associated with those attitudes and the effects of these attitudes on job performance (Herzberg et al. 1959). The authors concluded that job satisfiers, which they called "motivators", are different from "dissatisfies", which they called "hygiene" factors. While both motivation and hygiene factors (as outlined in Table 3-6) meet the needs of workers, they do so for differing reasons:

- Motivation factors satisfy workers' needs for self-actualisation and can only be achieved through performing a task. This is how the worker receives the rewards reinforcing his/her aspirations leading to job satisfaction and hence increased performance (Herzberg et al. 1959);
- Satisfaction of the hygiene factors, by contrast, only prevents dissatisfaction removing the barriers for workers to achieve a higher level of job satisfaction (Herzberg et al. 1959).

Based on this distinction, the authors concluded that failed industry attempts to motivate employees are a result of using hygiene factors as motivators, with the clearest indication of this seen in the form of monetary incentives (Herzberg et al. 1959).

**Table 3-6: Motivation-Hygiene Factors (adapted from Herzberg et al. 1959)**

<b>Motivation Factors</b> <b>Satisfiers – factors involved in doing the job</b>	<b>Hygiene Factors</b> <b>Dissatisfies – factors involved in the job context</b>
Recognition	Company policy and administration
Achievement	Supervision (technical and human relations)
Interesting work (work itself)	Working conditions
Responsibility	Salary
Advancement	

Ambrose and Kulik (1999) found that this theory continued to be used throughout the 1990s and continues to have appeal because of the distinction made between motivation (intrinsic factors) and hygiene (extrinsic) factors. Sachau, (2007) supports the argument that, although controversial, this theory is still useful and popular in human resource management and is similar to the current positive psychology movement where relationships between money and happiness are concerned.

### ***Self-Determination Theory***

Edward Deci and Richard Ryan developed Self-Determination Theory (SDT) as a motivational theory based on the prior research of Heider and deCharms into the “perceived-locus-of-causality” (Deci and Ryan, 1985, p.7). SDT was developed as a meta-theory incorporating six sub-theories: Cognitive Evaluation Theory (CET); Organismic Integration Theory; Causality Orientations Theory; Basic Psychological Needs Theory; Goal Contents Theory; and Relationships Motivation Theory (illustrated in Table 3-7) for ease of use in organisational settings (Gagne and Deci 2005). According to the Self Determination Theory website (2016) SDT “is an organismic dialectical approach” based on the assumption that people are active organisms existing within “the social context that is the basis of SDT’s predictions about behaviour” (The Self Determination Theory website, 2016).

Deci and Ryan, (1985; 2000; 2008) have determined (on the basis of years of research into intrinsic motivation) that motivation is based on three psychological needs and involves the experience of personal choice. These needs can be defined as:

- Autonomy – self regulation; a form of internal behavioural regulation. Closely related concepts include choice, will and volition (Ryan and Deci, 2006);

- Competence – perceived ability in completing some activity; the need to be effective (Deci and Ryan, 1985); and
- Relatedness – the need to be recognised or loved by others (Ryan and Deci, 2006).

SDT postulates that satisfying the basic psychological needs for autonomy, competence and relatedness (which can be equated to Maslow’s self-actualisation, esteem; and belongingness and love needs respectively) is a universal necessity for all individuals’ psychological health (Deci and Ryan, 2008; Gagne and Deci 2005). Maslow uses this same argument, demonstrating that all people have these basic needs to varying degrees. Despite the apparent similarity of these concepts, Deci & Ryan (1985) state that autonomy and self-actualisation are not identical, because self-actualisation emphasises the importance of choice, whereas autonomy is freedom from control (see Table 3-7). Nonetheless, it is clear that these two theories overlap and, as Rasskavoza et al. (2016) demonstrate, it is possible to integrate SDT and Maslow’s need theory.

**Table 3-7: Self-Determination Theory compared with Maslow’s Basic Needs (adapted from Deci & Ryan 1985, The Self Determination Theory website 2016)**

Self Determination Theory			Maslow’s Hierarchy of Needs
Sub-Theory	Definition	Psychological Needs	
Cognitive Evaluation Theory	Effects of external events on intrinsic motivation	Competence Autonomy	Esteem Self-Actualisation
Organismic Integration Theory	Development of intrinsic & extrinsic motivation	Competence Self-Determination	Esteem Esteem/Self-Actualisation
Causality Orientations Theory	Individual differences in initiation & regulation of behaviour	Autonomous Controlled	Self-Actualisation Esteem/Self-Actualisation
Basic Psychological Needs Theory	The basic needs of autonomy, competence and relatedness are universal and satisfaction of these is needed for psychological wellbeing.	Autonomy Competence Relatedness	Self-Actualisation Esteem Belongingness & Love
Goal Contents Theory	Distinguishes between intrinsic & extrinsic goals and their impact on motivation.	None specifically stated.	
Relationships Motivation Theory	Posits that personal relationships and interactions are essential and lead to need satisfaction.	Relatedness Autonomy Competence	Belongingness & Love Self-Actualisation Esteem

Since Cognitive Evaluation Theory is concerned with the effects of external events on intrinsic motivation, this sub-theory will be covered briefly with Motivation Crowding Theory in Section 3.4.



SDT and its sub-theories have been used as frameworks for studies most notably applied to the areas of education, psychotherapy and behaviour change, as well as sports – with few studies being conducted in organisational settings (Deci and Ryan, 1985; Gagne and Deci; 2005). SDT has not been used by information systems research studies to any significant extent, although a few studies pertaining to technology adoption have made very limited use of SDT. For example, Malhotra et al. (2008) used organismic integration theory to demonstrate how “users’ intentions are determined by their innate psychological needs for self-development and self-growth” (Malhotra et al. 2008, p. 293), while Ke and Zhang (2009, p. 39) used SDT to investigate “the effects of motivation on participant performance in” Open Source software projects.

SDT has been described as controversial in the field of psychology because of its focus on needs and the distinction it makes between intrinsic and extrinsic motivation (as described below) (Deci and Ryan, 2000; Festré and Garrouste, 2015; Latham, 2007; Ryan and Deci, 2006). Although Latham (2007) does concede that needs underlie all motivation, most contemporary motivation theories such as Goal Setting Theory, are in fact cognitive theories (Deci and Ryan, 2000). It is these theories, based on the concept of goals as opposed to the concept of needs, which now dominate the motivation literature (Deci and Ryan, 2000; Latham, 2007). Deci and Ryan (1985, p. 6) argue that the majority of these cognitive theories “...are, technically speaking, not motivational theories because they do not address the aspect of energisation ... although they have had an important influence on the field of motivation by directing attention to the concept of choice”.

The Organismic theories outlined here provide the basis for understanding Motivation Crowding Theory, which is part of the Framework of Ideas used in this research project. However, before moving onto Motivation Crowding Theory, it is necessary to provide an overview of the different types of motivation in order to fully appreciate the additional complexities surrounding motivation types which extend the motivation concept in the area of ICT.

### **3.4 Extrinsic and Intrinsic Motivation**

Types of motivation will be introduced in this section with a focus on the two main types of motivation, Extrinsic and Intrinsic, which have previously been the focus of technology acceptance research. There are varying levels of those two types of motivation, however, so the Continuum of Motivation is presented below. This introduction to the types of motivation is the precursor to an explanation of the crowding-out effect and, in particular, to a discussion of Motivation Crowding Theory.

The distinction between extrinsic and intrinsic motivation continues to be a controversial issue in the motivation literature (Latham, 2007; Reiss, 2005). The necessity to distinguish between intrinsic and extrinsic motivation came about because of the undermining effect of extrinsic rewards on intrinsic motivation (Reiss, 2005) and is outlined in Section 3.4.

Deci and Ryan, (1985, p. 43) define intrinsic motivation as being:

“...the innate, natural propensity to engage one’s interests and exercise one’s capacities, and in so doing, to seek and conquer optimal challenges. Such motivation emerges spontaneously from internal tendencies and can motivate behaviour even without the aid of extrinsic rewards or environmental controls.”

By contrast, extrinsic motivation occurs where the cause of motivation is external to the organism and this term is often used to describe drive-based motivation such as sex, aggression and the avoidance of pain (Deci and Ryan, 1985; Reiss, 2004).

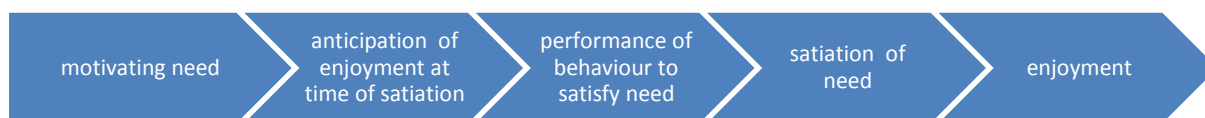
Authors in this area have used a variety of descriptive terms for intrinsic and extrinsic motivation, for example deCharms uses the terms Origin/Pawn (free/forced) for understanding the effects of personal causation in motivation (deCharms, 1968; Notz, 1975) – and these are the terms on which SDT is based. Herzberg uses the terms Movement/Motivation when describing his motivation-hygiene theory, where ‘movement’ relates to extrinsic motivation (fulfilling hygiene needs) and ‘motivation’ relates to an intrinsic impetus (fulfilling motivator needs) (Ambrose and Kulik, 1999; Sachau, 2007). Davis et al. (1992) use the terms usefulness (extrinsic motivation) and enjoyment (intrinsic motivation) to investigate their effects of intention to use technology, as discussed in Section 1.1.4.

As already noted, both Maslow and Deci and Ryan argue that intrinsically motivated behaviour is based on the basic psychological needs common to all people, although the list of needs varies somewhat from one group of authors to the other. Similarly, Herzberg argues that intrinsically motivated behaviour is driven by needs which he terms ‘satisfiers’. The differences in terminology between these three groups of authors are outlined in Table 3-8.

**Table 3-8: Intrinsic Needs**

<b>Maslow’s Needs</b>	<b>Deci and Ryan’s Needs</b>	<b>Herzberg’s Needs</b>
Self Actualisation	Autonomy	Recognition
Esteem	Competence	Achievement
Belonginess and Love	Relatedness	Interesting Work (work itself)
Safety Needs		Responsibility
Physiological Needs		Advancement

Examples of intrinsic motives cited in the literature have also included play and enjoyment (Davis et al., 1992; Reiss 2005; Venkatesh, 2000). However, as Deci and Ryan (1985); Reiss (2004; 2005) and Baumeister (2016) point out, enjoyment (feeling happy) is a feeling/emotion resulting from the satiation of a need rather than being a motivator in and of itself, as illustrated in Figure 3-6. Similarly, play is only manifested after the satiation of a need (Maslow, 1970).



**Figure 3-6: Enjoyment as a result of intrinsic motivation (adapted from Reiss, (2005)**

Reiss (2004; 2005) argues that motivation is multifaceted and cannot be reduced to just two categories of being either intrinsic or extrinsic in nature. Latham (2007), citing arguments from authors such as Bandura, agrees that it is difficult (if not actually impossible) to determine whether a person is intrinsically or extrinsically motivated. Reiss (2004) believes that his theory of 16 Basic Desires demonstrates the multifaceted nature of intrinsic motivation. Reiss's basic desires, called intrinsic motives, include: power; curiosity; independence; status; social contact; vengeance; honour; idealism; physical exercise; romance; family; order; eating; acceptance; tranquillity; and saving. Reiss (2004) classes psychologically significant end-motives as intrinsic motives, which is clearly different from Deci and Ryan's definition of intrinsic motivation outlined above. These end-motives (intrinsic motives) are based on the

“criterion of psychological importance...to focus multifaceted theory on behaviours that historically have been central to psychological personality theory...without the criterion of psychological significance, there may be scores of basic motives...” (Reiss, 2004, p. 185).

It can thus be argued that Reiss's multifaceted nature of intrinsic motives reads more like a list of drives (extrinsic motivators) than of intrinsic motives. Rather than term these desires 'intrinsic motives' the multifaceted theory presented by Reiss may best be illustrated along Deci and Ryan's continuum of motivation, in which these motives are classified according to the type of self-regulatory basis of behaviour, as illustrated in Figure 3-7.

In SDT and, in particular, in Organismic Integration Theory (OIT) (Ryan and Deci, 2000a; 2000b) the focus is on type of motivation rather than on the amount of motivation a person may have to engage in particular behaviours or tasks (Deci and Ryan, 2008). A continuum of motivation has been classified into autonomous motivation, controlled motivation and amotivation as predictors of performance (Deci and Ryan, 2000; 2008; Ryan and Deci, 2006) as illustrated in Figure 3-7. Autonomous motivation includes intrinsic and the identified and integrated types of extrinsic motivation. whereas controlled motivation consists of external and introjected regulation (Deci and Ryan, 2008). Amotivation is identified as a lack of intention and motivation (Deci and Ryan, 2008). These authors argue that autonomous motivation is the most beneficial type of motivation for psychological well-being and results in more effective performance and “...greater long term persistence, for example, maintained change toward healthier behaviours...” (Deci and Ryan, 2008, p. 183).

Behaviour	Non self-determined				Self-Determined	
Type of Motivation	Amotivation	Extrinsic Motivation				Intrinsic Motivation
Type of Regulation	Non-regulation	External regulation	Introjected regulation	Identified regulation	Integrated regulation	Intrinsic regulation
			Partial assimilation of external controls	Personal valuing of actions	Personally valued & fits completely with one's values & beliefs	

**Figure 3-7: Motivational Continuum, showing motivational and self-regulatory bases of behaviour. (Adapted from Deci and Ryan, 2000; Ryan and Deci, 2006)**

Ryan and Deci (2000b, p. 70) explain that their “theory of intrinsic motivation does not concern what causes intrinsic motivation ... rather it examines the conditions that elicit and sustain, versus subdue and diminish, this innate propensity.”

For the purposes of this research project, therefore, only Deci and Ryan’s definition of intrinsic motivation is relevant, since it is apparent that the combined basic fundamental needs of Maslow and Deci and Ryan energise and direct human behaviour. Rather than using either extrinsic or intrinsic motivation in isolation, this thesis will instead make use of the broad types of motivation classified according to the type of self-regulation of behaviour, as outlined in the Motivational Continuum shown in Figure 3-7.

The distinction between intrinsic and extrinsic motivation came about as a result of the undermining effect of extrinsic rewards on intrinsic motivation. Deci and Ryan’s cognitive evaluation theory (CET) studies the effects of external events on intrinsic motivation, arguing that environmental forces can and do undermine intrinsic motivation (Deci and Ryan, 1985). Motivation Crowding Theory, also known as CET, discussed in detail in Section 3.4, is part of the Framework of Ideas for this study.

### ***The Crowding Out Effect***

Theorists have argued that external events affect intrinsic motivation and thus, behaviour since 1961 (Deci et al. 1999). For example, deCharms (1968,) hypothesised that introducing an extrinsic reward (for task completion) to an originally intrinsically motivated task may reduce motivation rather than enhancing it adding, however, that there was very little evidence to substantiate this hypothesis. In response, Deci was the first to publish studies relating to deCharms’ hypothesis in 1971, exploring the effects of rewards (money, in this case) on intrinsic motivation (Deci and Ryan, 1985; Notz, 1975). By 1999 a total of 128 studies had shown the undermining effect of extrinsic rewards on intrinsic motivation (Deci et al. 1999).

Deci et al. (1999) pointed out that the reliability, robustness and practical outcomes of these studies continued to be the subject of debate, despite the substantial amount of research on the topic. Given that all the studies were “well controlled experiments” with participants ranging from pre-school to college age, (Deci et al. 1999, p.653) there was room to question these studies’ findings, particularly the generalisation of effects to mature populations in a wide range of settings and tasks (Notz, 1975). Although some field studies have been undertaken in this area (discussed below), it is clear further studies need to be undertaken in this field, taking into consideration the reactive effects they may produce in a non-experimental setting (Frey, 2001; Notz, 1975).

The discipline of economics offers evidence of field studies undertaken into “the net outcome ... of the relative price effect as well as the crowding effect” in Osterloh and Frey, (2007, p.439). Very briefly, the (relative) price effect is a basic understanding of human behaviour in the economics field derived from existing neo-classical economics (Frey, 2001), based on the idea that humans will “respond systematically to changes in relative prices” (Frey, 2001, p. 14) so that relative prices, such as wages, are extrinsic motivators. “The price effect applied to supply states that a higher price (other things being equal) induces an increase in supply, that is price and quantity are positively related” (Frey, 2001, pp. 53-54): in other words suppliers will provide greater quantities of their goods as the price they can obtain increases.

This approach is very similar to that of scientific management which has a mechanistic view of motivation (i.e. greater pay motivates workers to work harder), as outlined in Section 3.3.1. The crowding-out effect, however, predicts a contrary response to extrinsic motivation (Frey, 2001): an increase in price (e.g. extrinsic rewards) will reduce the supply of individual activity. The significant difference here is between supply of goods vs. supply of personal services – a distinction which is frequently ignored in the literature.

Osterloh and Frey (2007) list five field studies, with the most well-known example argued by Titmuss in 1970 (as reported in Osterloh and Frey, 2007) showing that paying blood donors to give blood undermined intrinsic motivation and led to a decline in blood donations. As reported in Frey (2001) and Frey and Goette (1999) other field studies have included;

- In Israel, monetary fines were introduced by a day care centre to encourage parents to pick their children up on time. This actually increased the number of parents arriving late to pick up their children, as their intrinsic motivation to be on time was reduced, (i.e. once a financial (extrinsic) motivation for arriving on time was introduced, the parents felt justified in arriving late since they would now be paying for this privilege);
- A Swiss Labor Force Survey conducted in 1997 found that paying volunteers for work actually reduced their volunteer work hours by around 4 hours per week, demonstrating that monetary rewards did, in fact, reduce the workers’ intrinsic motivation.

These examples show that field studies can be undertaken to test and/or illustrate the concept of intrinsic motivation, a discovery of primary importance for the present research project, which was based on empirical research undertaken in the field.

Although this effect has been studied for a number of years in both the psychological and, more recently, economics fields (Ryan and Deci, 2006; Frey and Jengen, 2001), authors such as Reiss (2005) and Latham (2007) continue to argue that the effect is still unproven. Sufficient evidence exists in the literature, however, to convince all but the most determined that extrinsic motivation affects intrinsic motivation and, as Frey and Jengen (2001) point out, it is an empirically relevant concept – especially for this research project.

### ***Motivation Crowding Theory***

The widely-published economist Bruno Frey introduced the intrinsic concept, together with deCharms' hypothesis, into the field of micro-economics in 1997 under the title of 'crowding-out theory' building on CET (Osterloh and Frey, 2007), although Frey and Stutzer (2006) specifically state that Motivation Crowding Theory (MCT) is also known as CET. The framework of ideas for this thesis, outlined in Section 1.1.5, is founded on Frey's work.

Frey & Jengen (2001) use the term "crowding-out" to describe the following effect: if people perceive external influences via rewards or regulations to be controlling them (Gallus and Frey, 2015), these external influences tend to *crowd-out* their intrinsic motivations. MCT looks at the identifiable relationship between intrinsic and extrinsic motivation, in particular extrinsic work incentives (Frey, 1997b; 2001). While this is consistent with the other research presented in this thesis, Frey (1994; 2001) suggests that the social sciences have not considered the relationship which exists between external interventions (rewards), intrinsic motivation and consequent behaviour.

MCT identifies three psychological processes (very similar to Deci and Ryan's needs as illustrated above in Section 3.3.3) to account for the crowding-out effect. According to Frey (2001) these include:

- Loss of self-determination – shift in locus of control from within a person to outside a person. This occurs when the external event is perceived to be controlling (the determination of one's own actions);
- Competence is not recognised – an external event appears to undermine intrinsic motivation if the person perceives their intrinsic motivation is not recognised and appreciated; and
- Deprivation of the ability to exhibit intrinsic motivation to others - expression

Some conditions determining the crowding-out effect, which are based on a person's subjective perception, include: the higher expectation of rewards; whether the reward is contingent upon tasks or specific performance; increased monitoring of work; and routinisation of rewarded work (Frey, 2001).

Frey (2001, p. 54) argues that “both economic theory and policy are strongly affected by the existence of crowding effects”. For example introducing incentive payments in firms and the public sector following New Public Management (NPM) ideals should be undertaken with caution (Frey, 2001). As shown in Section 2.2 NPM is now having an impact on the non-profit sector as well, so that this group, formerly almost entirely intrinsically motivated, is now also susceptible to these crowding effects.

Given that people working or volunteering within NPOs typically exhibit high levels of intrinsic motivation (Benz, 2005; Yeung, 2004) and that NPOs rely on this motivation playing an important role in their workforce’s effectiveness (Leete, 2000; Frey & Jengen, 2001; Benz, 2005) it is not surprising that Frey (2000) discusses the probable crowding effects on volunteering in particular, noting that they are expected to play a larger role here than in many other sectors of society as a consequence of the underlying motivation for volunteering, which is intrinsic. As demonstrated in Chapter 2. NPOs meet the two requirements needed for crowding to occur: their workers have a sufficiently high intrinsic work motivation; and the conditions are present (through the introduction of NPM practices) for crowding-out to occur. MCT is thus used as a framework for this research project.

This section, which is crucial to the creation of a theoretical framework for the present research project, has discussed the literature supporting the following assertions:

- That organisms are volitional and initiate their own behaviour (i.e. they have intrinsic needs and physiological drives);
- That fundamental needs are universal, both underlying motivation and impelling behaviour;
- That we cannot directly motivate a person to satisfy his/her needs, we can only create conditions to help individuals satisfy their needs;
- That it is reasonable to assume that this thesis can (and will) focus on the types of motivation (intrinsic and extrinsic) using the motivational continuum as set out in SDT, rather than focusing purely on the amount of motivation, as has formerly been the case in the majority of relevant IS literature;
- That Deci and Ryan’s definition of intrinsic motivation is valid and forms an appropriate foundation – in conjunction with a combined set of fundamental needs, from Maslow, Deci & Ryan and Herzberg – to guide our understanding of intrinsic motivation; and finally
- That the undermining effect, or crowding-out, of intrinsic motivation is relevant to this research project and that MCT provides a suitable framework for understanding this effect.

Now that we have a basis for understanding motivation, it is necessary to review how motivation might be measured as an important part of this research project, as well as to develop a measurement tool.

### 3.5 Measuring Motivation

As outlined in Section 2.3, motivation is inherently difficult to measure (Frey and Jegen, 2001) so that indirect measures such as satisfaction and performance are generally used. The relationship between motivation, satisfaction and performance was arguably first made by Elton Mayo who conducted the Hawthorne studies during the 1920's (Latham, 2007). These studies, to the surprise of the researchers themselves, led to the realisation that "money was not the sole motivator for workers" (Helms-Mills et al. 2009, p.27) and that productivity (performance), satisfaction and motivation were all related in some (undetermined) way.

According to Latham (2007), Taylor's scientific management (mechanistic view of motivation) argued that performance led to rewards which then created worker satisfaction, although research into this relationship has produced divergent results:

- In 1953, Viteles equated motivation with performance and satisfaction;
- In 1964, however, Vroom argued there was little or no relationship between satisfaction and performance;
- In 1967, Lawler and Porter argued that performance did in fact affect satisfaction;
- In 2002, Franco Bennett and Kafner argued that motivation should not be equated with satisfaction because it is not a prerequisite for motivation but, rather, that job satisfaction is more associated with work commitment.

Latham (2007) nonetheless concludes that: "the relationship between job satisfaction, and job performance reflects a continuous ongoing process where at one point in time one factor is causing another, and where at a later point in time it is being caused by it" (Latham, 2007, pp.100-101).

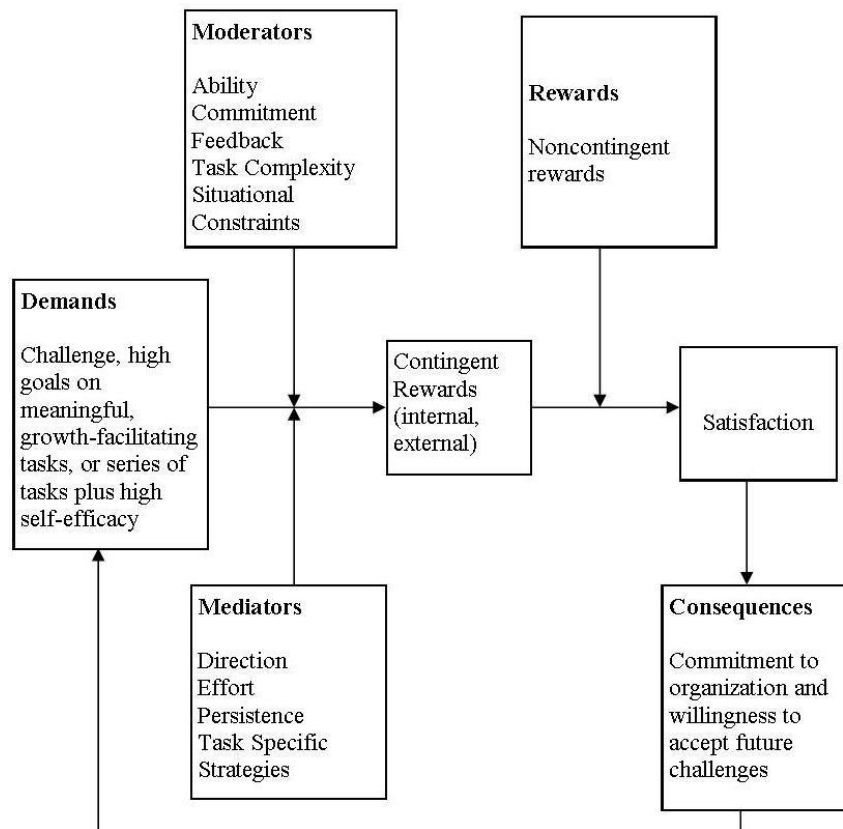
In order to link motivation with satisfaction, and thus with performance, Locke and Latham (1990) developed the High Performance Cycle – a framework designed to predict, explain and influence worker motivation and thus increase performance (Latham, 2007) as illustrated in Figure 3-8. These authors combine elements of goal setting theory, expectancy theory and social cognitive theory to explain worker motivation (Locke and Latham, 1990).

Briefly, they argue that if tasks are challenging and are perceived as being meaningful (by the worker), then task performance is heightened, leading to high rewards (both internal and external) and thus satisfaction (Latham, 2007; Locke and Latham, 1990). A consequence of this satisfaction is commitment to the organisation and the willingness to "accept future challenges" (Latham, 2007, p. 80). Latham (2007) argues organisational commitment leads to higher job performance (thus the cycle) whereby commitment "is a powerful source of motivation" (Latham, 2007, p. 93) and, in contradiction to the concept of motivation, will have longer lasting behavioural implications for workers. However, these authors used cognitive theories to describe motivation; the high performance cycle is limited to feelings of job satisfaction and organisational commitment (Latham, 2007) and neglects any intrinsic motivation an individual worker may have.



This presentation of the High Performance Cycle provides an underpinning for the complexities surrounding the measurement of motivation, but it will not be developed further in this thesis.

Despite the fact that the relationship between motivation, satisfaction and performance continues to be a controversial issue, satisfaction is the most commonly used measurement of motivation (Latham, 2007). Satisfaction - whether of needs, the work itself, management or the organisation - is generally measured using a self-report measure, (i.e. attitude surveys (Latham, 2007; Reiss, 2005)); and attitudes, in turn, are generally used to understand and predict behaviour (Ajzen, 2001; Latham, 2007).



**Figure 3-8: The High Performance Cycle (Latham, 2007, p. 81)**

Very briefly, attitudes:

“...represent a summary evaluation of a psychological object captured in such attribute dimensions as good-bad, harmful-beneficial, pleasant-unpleasant, and likable-dislikeable” (Ajzen, 2001, p.28).

See Ajzen (2001) for an overview of attitude theory.

A wide variety of survey types are used to measure motivation including, for example, the Minnesota Satisfaction Questionnaire which assesses an employee's intrinsic (e.g. sense of achievement) and extrinsic (e.g. pay) satisfaction (Latham, 2007). Alternatively, Deci and Ryan's Self Determination Theory (SDT) website at Rochester University provides a suite of motivation surveys such as: the Intrinsic Motivation Inventory (IMI), a survey which uses interest and enjoyment to measure intrinsic motivation; The Basic Need Satisfaction at Work Scale found in the Basic Psychological Needs Scales; and The Work Climate Questionnaire (WCQ) found in the Perceived Autonomy Support: The Climate Questionnaires group. Herzberg's theory was used by Sluyter and Mukherjee (1986) to develop a job satisfaction survey with the aim of understanding extrinsic (hygiene) and intrinsic (motivator) needs.

Reiss (2005, p. 9) argues there is "no psychometrically sound self-report measure of intrinsic motivation ... (that is) widely used ...", instead "only one or two makeshift questions (Do you like X?)" are typically used. The Reiss Profile of Fundamental Goals and Motivation Sensitivities is a 120 item self-report survey assessing trait motives (an assessment of motivation) (Havercamp and Reiss, 2003) based on the 16 basic desires as outlined in Section 3.4. Havercamp and Reiss (2003) explain that "each item (of the survey) was designed to measure the strength of an individual's intrinsic attraction or intrinsic aversion to a specific life goal ... (and consists) of the phases "I like", "I enjoy", and so on (Havercamp and Reiss, 2003, p. 125). These authors conclude that the results of this survey instrument provide evidence that self-report motives can be assessed within psychometrically sound limits (Havercamp and Reiss, 2003), although they appear to use types of questions or phases similar to those which Reiss (2005) argues are problematic for motivation measurement.

As Latham (2007, p. 56) states "needs are the origin of action" and, as shown above, needs are the underlying causes of motivation leading to performance of an activity to satisfy that need. However, satiation of the need may have various consequences such as enjoyment (Davis et al. 1992) or commitment to the organisation (Locke and Latham, 1990). If motivation itself cannot be measured then it would be reasonable to assume that performance and the end result of motivation, i.e. the satiation of the need, would be indirect measures of motivation.

The arguments presented in this section support this assumption therefore, in this research study, satisfaction and performance will be used as measures of intrinsic motivation based upon the fundamental needs inherent in all people. A review of various survey instruments (including the ones mentioned here) purporting to measure intrinsic motivation has been undertaken to enable the use/modification/creation of an appropriate measurement instrument for this thesis, as outlined in 0and Chapter 7.

Since this research project involves an ICT-enabled organisational change, it is necessary to review the relationship between organisational change and motivation, just as it was necessary to review technology acceptance and motivation prior to developing the theoretical foundation for this study. The following section therefore provides a brief review of motivation and organisational change.

### 3.6 Motivation and Organisational Change



Just as in technology acceptance, the motivation of workers to undertake and continue with organisational change initiatives is crucial for the initiative to be successful (Armenakis and Bedeian, 1999; Likert, 1967; Elias, 2009; Oakland and Tanner, 2007). It appears that the organisation change literature, like the technology acceptance literature, has a somewhat limited view of motivation. For example, Elias (2009) in his exploratory study investigating three antecedents of attitudes to change (internal work motivation, growth need strength, and locus of control), identifies a gap in the literature between intrinsic motivation, which he terms “internal work motivation”, and attitudes to organisational change.

Any change strategy including a technology-related change needs to take into account an employee’s psychological processes (such as intrinsic motivation), as these have a direct relationship to the likely success or failure of the initiative (Elias, 2009; Armenakis and Bedeian, 1999; Gilley et al. 2009; Likert, 1967).

A variety of organisational methods and models (to be discussed in Section 3.8) have tried to take worker motivation into consideration by including participatory initiatives such as including workers in the change process at nearly every stage. Unfortunately, though, merely including participatory initiatives has proven insufficient to sustain successful organisational change. Introducing the intrinsic motivation concept into organisational change initiatives (largely ignored by the organisational field (Gagne and Deci, 2005; Osterloh and Frey, 2007)), while difficult to determine, measure and apply in work settings (Gagne and Deci, 2005; Frey and Jegen, 2001; Deci et al. 1999; de Charms, 1968), would lead to organisational change initiatives being a long term success.

For example, Deci and Ryan (2008) have found that autonomous motivation (including intrinsic motivation) is the most beneficial type of motivation generating persistence in maintaining change (as discussed in Section 3.4) and Morin et al. (2016) have incorporated SDT and Armenakis’ (Armenakis and Bedeian, 1999) change readiness theory with two psychological reactions to change (affective commitment to change and psychological empowerment) “to propose an overarching theoretical framework to employees’ reactions to complex and continuous change”. Understanding autonomous motivation during a change event will allow me to design interventions to maintain – and possibly enhance – intrinsic motivation during an organisational change process, thus leading to longer-term success.

This section highlights the fact that, as with technology acceptance, organisational change does not adequately address the motivation concept – despite its critical role in acceptance of both. This thesis is broadening the motivation concept in terms of both technology acceptance and organisational change. These two concepts will be discussed further in relation to how technology acceptance theories have combined with organisational change; and an overview of organisational change is provided in the next section.

### 3.7 Technology Acceptance and Organisational Change



“The relationship between information technology and organizational change is a central concern in the field of Information Systems (IS)” (Markus and Robey, 1988, pg. 583).

Implementing any ICT into an organisation is a complex process that must inevitably lead to change (Barki et al. 2008; Kouroubail, 2002; McNish, 2002; Torres and Sidorova, 2015). “Complementary” changes (Markus, 2004; Markus and Mao, 2004) are those which occur in areas such as work processes, job design, and compensation when an ICT-enabled change is undertaken. In fact, Markus and Mao (2004) argue that it is difficult to differentiate between the system being implemented and these other aspects of change.

Yet Markus (2004) argues that using ICT to drive organisational change (‘Technochange’ is Markus’ term) is fundamentally different from other organisational change programs. The author goes on to say that ICT alters the problems associated with organisational change and that using organisational change management approaches is not sufficient. The key risks involved in Technochange, Markus (2004) argues, are the risk of not using (or misusing) ICT and the risk of providing a bad ICT solution for the problem. She also claims that ICT project management or organisational change programs cannot fully address these risks and that:

“...experts estimate that as many as 75% of organisational change efforts involving technology fail (even when the technology performs acceptably) because of people’s negative reactions to changes in their work, organizational business processes and the technology they use” (Markus, 2004, p. 5).

If the principal reason organisational change efforts involving technology fail is because of the negative reactions of the people affected by the change (as Markus notes); and if employee resistance to change is also a major reason for failure in any organisational change project whether the change project is ICT-based or not (this will be discussed in Section 3.8.1), then it would appear that the inclusion of technology in a change process has little (if any) effect on its likely success or failure.

Benjamin and Levinson (1993) agree with Markus that ICT-enabled change processes are different, purely because the technology, organisational and business processes need to be integrated to realise the anticipated benefits of implementing the technology. These authors draw on eight principles from the change management literature which they argue managers need to consider when implementing an ICT-enabled change – which suggests there is very little difference between any change process and an ICT-enabled change process. Rather, following Leavitt's approaches to change, the emphasis of change is focussed on a technological approach to change as opposed to a people approach to change, as will be demonstrated in Section 3.8. While ICT may be an enabler of change, it is still part of an overall change process and there exists a recognised need for more interaction between the information technology and organisational change research areas (Davis and Songer, 2008; McNish, 2002; Morris and Venkatesh, 2010; Peansupap and Walker, 2005).

A number of researchers believe that ICT project management and organisational change management approaches are not sufficient in and of themselves to ensure successful ICT-enabled organisational change initiatives (see Markus, 2004). For example, Peansupap and Walker (2005) discuss the difficulties the construction industry experiences implementing ICT, arguing that ICT experts neglect the role people play in the change project, a view shared by Davis and Songer (2008).

Peansupap and Walker (2005, pp. 197-198) contend that "IT implementation problems were viewed as change management constraints...and that the concept of change management is required as an additional IT implementation process".

These authors have proposed a framework for understanding ICT diffusion at the individual adoption stage consisting of: (1) self-motivation; (2) training and technical support; (3) technology characteristics; (4) environment for workplace support; and (5) knowledge-sharing environment, citing self-motivation and a supporting workplace environment as important enablers of ICT diffusion (Peansupap and Walker, 2005). McNish (2002) argues that ICT implementation projects neglect the role of people by focusing on technical and financial aspects associated with the change; and that change management guidelines need to be used in any implementation project.

Motivated by a 60% failure rate in ERP-initiated organisational change projects, often brought about by changes caused to jobs and/or the work processes that occur when implementing such a system, Morris and Venkatesh (2010) have contributed to expanding the relationship between the IS implementation and organisational change research streams. These authors review Cooper and Zmud's (1990) implementation process, the four-phase enterprise system experience model used to describe the ERP implementation process, and build on the Job Characteristics Model to demonstrate that implementing such a system moderates the relationship between three job characteristics (skill variety, autonomy and feedback) and job satisfaction. They claim this finding has broadened the implementation research stream "by moving beyond a focus on technology-centric outcomes, such as system use, to understanding broader job outcomes. (Morris and Venkatesh, 2010, p. 143).

This Section has shown that although organisational change is a necessary part of an IT implementation project, the IS research literature in this area is limited. This thesis thus further broadens the implementation research by drawing on organisational change literature with a focus on a people approach to change, as outlined in the next section.

### 3.8 Organisational Change



In order to incorporate organisational change into the present research project as a basis for implementation, it is necessary to provide a brief review of organisational change and the ways in which it has been used previously in IS research. This section of the literature review will consist of: An overview of the types, approaches to, and resistors of organisational change:

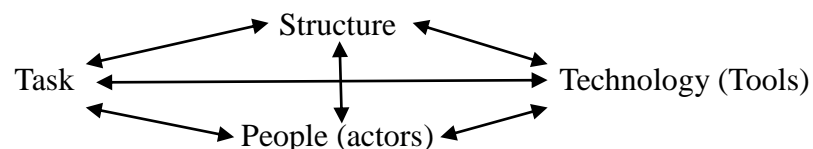
- An outline of three change management models –Lewin's Three Step Change Model, Kotter's Eight Step Model and Hackman & Oldham's Organisational Change Framework; and
- A brief history of management theories relevant to organisational change, including an outline of the Job Characteristics Model; and Theory X and Theory Y.

The literature on organisational change is extensive, offering a substantial number of theories, models and methods. Dunphy (1996, pg. 541) argues that there is "no one all-embracing, widely accepted theory of organisational change and no agreed guidelines for action by change agents". Burke (2002) agrees, pointing out that using a combination of change theories offers a better understanding of organisational change.

The various theories, models and methods found in the organisational change literature are usually based on the types and levels of change where different techniques would be used, according to the type and level of change being undertaken (Burke, 2002; Weick and Quinn, 1999). The two principal types of change referred to in the literature are planned and unplanned; where planned refers to repetitiveness and a cyclical approach (McNish, 2002), which may be characterised using Lewin's three step change model (presented below). Other types of change which have been discussed in the literature include: episodic and continuous, where episodic is similar to planned change in that it is carried out intentionally and is discontinuous (Pettigrew, et al., 2001); transformational (addressing major changes such as strategy, leadership etc.); and transactional (changing everyday functions, such as systems, management practices and so on) (Soltani et al. 2007). These different types of change affect varying levels in the organisation: the organisational level; the group level; and the individual level (Burke, 2002; Orlikowski, 2002).

The organisational change literature is diverse and descriptions of organisational change vary with the level of analysis (Weick and Quinn, 1999). It is generally accepted that when change occurs it results in something different. Organisational change, therefore, is making something different within an organisation whether that be: changing how the organisation functions; introducing new technology or a new service or product; closing a department; changing management; and so on (Helms-Mills et al. 2009; Weick and Quinn, 1999). Organisational change is more than just about change: it is about the extent to which the change is felt within the organisation and about how change affects the members of the organisation, for example, how they do their job: "Thus, organizational change can be defined as an alteration of a core aspect of an organization's operation" (Helms-Mills et al. 2009, p. 4).

The core aspects have been identified as: structure; technology; people; culture; leadership or goal of the organisation (Helms-Mills et al. 2009). Three of these core concepts are exactly the same as Harold Leavitt's classification of approaches to change. Leavitt (1964) classified several approaches to change by naming four major interacting variables: structure; technology; actors and task as shown in Figure 3-9. Structure includes such things as systems of communication and systems of authority (similar to the core aspect of leadership) and technology is defined as technical tools used, (e.g. computers and drill presses) (Leavitt, 1964).

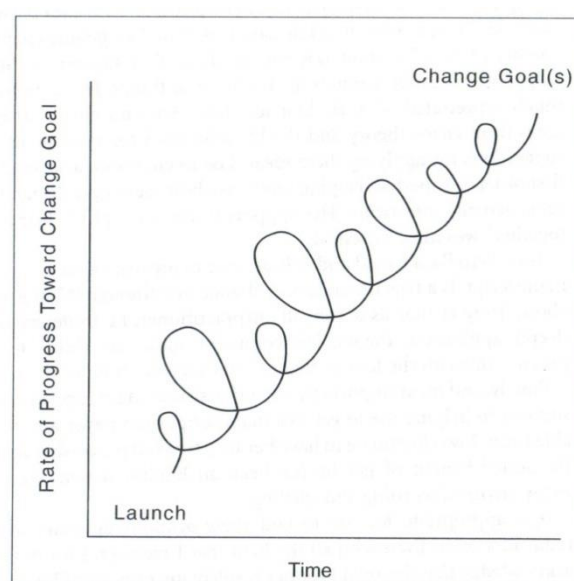


**Figure 3-9: Four Approaches to Change (from Leavitt, 1964, pg. 363)**

The author goes on to argue that although he differentiates “structural from technical from human approaches to organisational tasks” (Leavitt, 1964, pp. 364-365), a change in one approach will have an impact on the other areas, regardless of whether the object of the proposed change is an end in itself, or is merely a means of making changes in any of the other variables (Leavitt, 1964). The emphasis of the change initiative is to change the order of these four variables. For example, a structural change is usually undertaken by means of an analysis of worker tasks, resulting in changes to jobs and systems (e.g. systems of authority) so as to enhance organisational structure and performance (Leavitt, 1964). The people approach to change, by contrast, is focussed on changing behaviours which causes changes to task performance, among other things. Leavitt (1964) places the technological approach in the same category as Scientific Management (as outlined in 3.3.1), where both have “developed technical methods for solving work problems...” (Leavitt, 1964, pp. 368).

Building on Levitt’s four approaches to change, outlined above, this research project focuses on the people approach to change. Although this approach is not the end objective in itself, (the end objective in this project is to successfully implement an information system in an NPO) it will be used to ensure the success of the implementation project, by focussing on changing behaviours whilst working to maintain the intrinsic motivation of staff. Changing peoples’ behaviour will affect the other areas such as accepting the technology and the related changes to task performance.

It has been argued that whether a change is planned or unplanned, the implementation of the change is likely to be messy and haphazard (Burke, 2002; Pettigrew, 1990; Weick and Quinn, 1999). During implementation individuals within an organisation can cause unanticipated problems leading to the change being more of a spiral process than a linear one (Burke, 2002; Pettigrew, 1990; Weick and Quinn, 1999) as demonstrated in Figure 3-10. These unanticipated problems are generally manifested as an individual’s resistance to change.



**Figure 3-10: Nonlinear nature of Organisational change (Burke, 2002)**



### 3.8.1 Resistance to Change

It has been argued that employee resistance to change is a major cause of failure in an organisational change project (Bovey and Hede, 2001; Davis and Songer, 2008) yet it appears there are very few studies on resistance to change (Laumer et al. 2016). In contrast Ali et al. (2016) report in their literature review on user resistance to IT that there is a wide amount of literature on the resistance topic. Meier et al. (2013) argue that TAM fails to recognise resistance and the reasons why an implementation project might fail. Therefore it is important for me to understand and recognise resistance to change during this study. Resistance will be an indication that the worker's motivation may have been crowded-out and is no longer autonomous in nature. This will allow me to implement strategies to create the conditions necessary for autonomous motivation of acceptance.

Individual resistors or barriers to change are viewed as involuntary psychological responses to something new or different (Bovey and Hede, 2001; McMillan, 2008). Oreg (2003) developed a resistance to change (RTC) scale to “measure an individual's dispositional inclination to resist changes” (Oreg, 2003, p. 680) consisting of 17 items (Nov and Ye, 2008). Oreg (2003) and Oreg et al. (2009) argue that aspects of an individual's personality will influence a typical response to change:

- Routine seeking – the extent to which people enjoy and seek out routines;
- Emotional reaction to change – the response to imposed change;
- Short-term focus – whether the individual's focus is on short-term inconvenience vs. long-term benefits of change; and
- Cognitive rigidity – holding on to one's views. This is also known as dogmatism, or the extent to which people tend to be closed-minded and more reluctant to change (Oreg, 2003).

These personality traits are then used to predict behaviour (Nov and Ye, 2008). The RTC scale has been used in a number of studies (see Oreg et al. 2009; Meier et al. 2013). Nov and Ye (2008) used the RTC in the technology acceptance model (TAM), arguing that the RTC trait was a significant determinant of perceived ease of use (TAM was discussed in Section 3.2.2). Similarly, Laumer et al. (2016) used the RTC and TAM to test the dispositional resistance to change and support Nov and Ye's findings that the RTC trait has a significant impact not only on perceived ease of use but also on usefulness. Therefore it is appropriate that in this study some questions from the RTC scale have been used as outlined in Chapter 7.

Bovey and Hede (2001) took a slightly different approach, identifying two adaptive defences to change (humour and anticipation) and five maladaptive defences (denial, dissociation, isolation of affect, projection and acting out). These authors believe it is necessary to address the underlying motivations for these outward aspects of behaviour to achieve attitudinal change (Bovey and Hede, 2001). This research study will be looking to identify the underlying motivations causing the resistance to change which will allow me to implement strategies to create the conditions necessary to reduce the crowding-out effect caused by the change.

### 3.8.2 Previous Organisational Change Literature Reviews

This research project is concerned with a planned change focusing on a people approach to change. Rather than simply reviewing the various theories, models and methods used in a planned change approach, however, it is both faster and more effective to summarise the two most recent organisational change literature reviews undertaken by other authors – such a summary is particularly helpful in demonstrating the breadth of the organisational change research stream.

The organisational change literature has been reviewed four times in the *Journal of Management's Yearly Review* series, beginning in 1987 (Armenakis and Bedeian, 1999; Elias, 2009). Five additional reviews were completed between 1974 and 1999; two appearing in edited books and three in the *Annual Review of Psychology* (Burke, 2002; Pasmore and Fagans, 1992), suggesting the field of organisational change has a long history (Pettigrew et al. 2001). An overview of the two most recent reviews, both published in 1999 in separate journals, follows. It is important to note here that it appears there has been no new review of the organisational change literature since those published in 1999, as Kuipers et al. (2014) note in their review of the literature relating to management of change in public organisations.

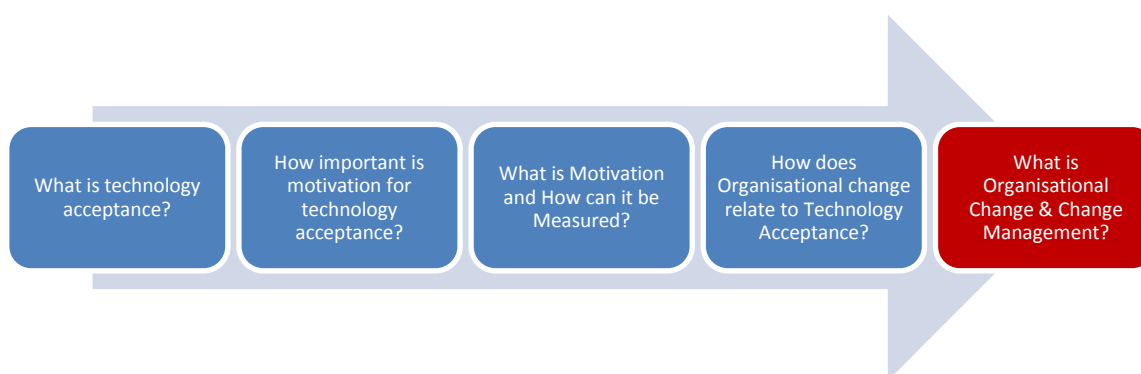
Weick and Quinn's (1999) review, published in the *Annual Review of Psychology* is less a structured literature review and more a discussion about the nature of organisational change, based on the framework of episodic (revolutionary) and continuous (evolutionary) change (Burke, 2002; Weick and Quinn, 1999). The authors argue that episodic change should follow Lewin's three step change model (Burke, 2002; Weick and Quinn, 1999) and uses Dunphy's (1996) five elements of change which any comprehensive theory of change should include (Weick and Quinn, 1999):

1. Metaphor of the nature of the organisation;
2. Analytic framework to understand the change process;
3. Ideal organisation – specifies direction for change e.g. capable of continuous adaptation;
4. Intervention theory; and
5. Defining the role of the change agent.

Armenakis and Bedeian's (1999) review, published in the *Journal of Management's Yearly Review*, focuses on theory and research covering four common issues: content issues; contextual issues; process issues and criterion issues. Very briefly, content issues focus on the substance of organisational changes; contextual issues focus on an organisation's existing internal and external conditions or forces; and criterion issues focus on assessing organisational change (Armenakis and Bedeian, 1999). This project is most interested in the process issues which deal with the "actions taken to implement changes within organizations and the nature of employee responses to such efforts" (Armenakis and Bedeian, 1999, p. 295). Such issues usually address the process (or actions) of a planned change, for example (as discussed previously) the introduction of NPM practices into government has forced changes in the external environment of NPOs. The regulations imposed by these changes (in terms of funding and reporting) have altered the inputs and services in NPOs. The impact of these changes has required NPOs to change accordingly: "In turn, actions must be initiated to change the behaviour of individual employees so that desired outcomes are achieved" (Armenakis and Bedeian, 1999, p. 295).

These authors also review affect and behaviour in organisational change, noting that in the short term most change efforts do achieve their intended goals, nearly all of which are economic and are easily measurable, (e.g. increasing production, lowering costs and the like). However, they generally also have a negative side-effect in terms of the reactions of staff, resulting in reduced worker morale and organisational commitment (Armenakis and Bedeian, 1999). One commonly accepted reason for short term success is that, while the change process is occurring, workers temporarily adopt or willingly take part in the change process. This type of temporary behaviour, however, does not change overall long-term behaviour so ultimate rejection occurs, suggesting that overall behavioural change is necessary to ensure longer lasting success of change initiatives (Armenakis and Bedeian, 1999; Elias, 2009; Likert, 1967; Oakland and Tanner, 2007).

### 3.8.3 Change Management



This study is concerned with the process of change, (i.e. with managing the implementation process of organisational change). The management of the organisational change process plays an integral (perhaps even a central) role in the success or failure of the change initiative among workers. Many theories, models and methods of undertaking organisational change exist to help management undertake organisational change, such as Lewin's three step change model, Kotter's eight step model and Oakland and Tanner's organisational change framework – as outlined below. Yet according to Gilley et al. (2009, p.75) “organisational leaders lack a clear understanding of, or ability to engage the steps necessary to implement change successfully”.

Other change models include business process reengineering (BPR) and total quality management (TQM) (Gardner and Ash, 2003). BPR has been described by Khalil (1997) as an approach used for achieving radical change within organisations and Markus and Robey (1998, p.599) states that it “involves simultaneous changes in multiple aspects of the organization”. This research project is not designed to achieve radical change within Uniting Communities (UC) and it does not involve making changes to multiple aspects of the organisation, therefore BPR has been deemed not to be relevant for this research and has not been covered in the literature review. TQM is not relevant for very similar reasons and therefore has not been covered in the literature review since TQM is concerned with a new way of managing the business with a view to achieving continuous improvement (Mohd Yusof and Aspinwall, 2000). UC already uses a quality management framework and it is this framework which has identified the problem situation leading to the present research project as just one area for improvement.

### ***Three Step Change Model***

Perhaps the most widely recognised and referenced change model (Orlikowski, 2002) is Lewin's (1951) three step change model, which “continue(s) to be a generic recipe for organizational development” (Weick and Quinn, 1999, p. 363). Lewin argued that it was “usually easier to change individuals formed into a group than to change any one of them separately” (Lewin, 1951, p. 228), so he developed the three step change model to change group standards and lift performance. Lewin, (1951) argued that short-lived change was not enough to sustain a permanent change and so the following three steps needed to occur within groups to ensure permanency of the new standard. According to Helms-Mills et al. (2009) and Gilley et al. (2009) these stages included:

- (1) unfreezing: creating the need for change within the group and organisation, through education or confrontation;
- (2) moving (also known as change): is implementing the actual change and moving to the desired end state. This may involve implementing new policies, processes and more generally developing new values, attitudes and behaviours within the group; and
- (3) freezing: anchoring these new processes and behaviours within the group through organisational structure and support.

This model uses group decisions as a method for lowering individual resistance to change, based on the assumption that individuals will resist change if group standards do not change (Lewin, 1951) as well. Lewin does, however, admit that using group decisions are not a prescriptive change method and that an analysis should be undertaken prior to using this approach.

### ***The Eight Step Model***

Many multistep frameworks have been built on Lewin's early work. Kotter (1995), for example, suggests an eight-step model focusing on the importance of leadership (Gilley et al. 2009; Helms-Mills et al. 2009). According to Armenakis and Bedeian (1999); Gilley et al. (2009) and Kotter (1995) this model consists of:

- (1) establishing a sense of urgency within the management group;
- (2) creating a guiding coalition to lead the change effort;
- (3) developing a vision and strategy to direct and achieve the change;
- (4) communicating the change vision, and for the coalition to lead by example in demonstrating new Behaviours;
- (5) empowering broad based action, by eliminating obstacles to change;
- (6) generating short term wins, and recognising and rewarding employees involved in the change;
- (7) consolidating gains and producing more change; and
- (8) anchoring new approaches in the culture.

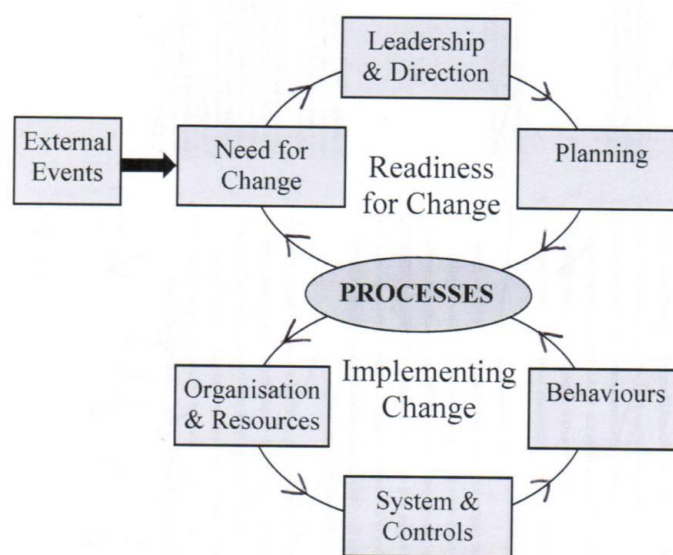
Kotter's model has been criticised for not recognising the human factor (Gilley et al. 2009) involved in change efforts. It seems apparent, however, that the author has tried to take the 'human factor' into account to at least some extent by including such leadership tasks as establishing a sense of urgency, communication and empowering action to help manage the change process. How motivating these steps are may be is another matter, however, and depends on management's assumptions about people. If, for example, managers assume that people are passive and reactive then these steps would be considered to be very motivating because, as outlined in Section 3.3.1, motivation is primarily developed through reinforcement (such as learning) (Deci and Ryan, 1985; Latham, 2007). An example of this would be managers leading by example in demonstrating new behaviours, as outlined in step four above.

In addressing the motivational aspects of organisational change (just like the cognitive theories discussed in Section 3.3.2), these models all focus on directing worker behaviour towards accepting change through the processes outlined within each model. These models do not, however, consider why a worker might be motivated to change, nor do they consider the possible types of motivation and how these might affect worker performance and satisfaction in relation to the long-term success of organisational change efforts.

### Organisational Change Framework

The organisational change framework (Oakland and Tanner, 2007) also addresses the issue of directing behaviour towards accepting the change. Like the other models above, however, it does not address the types of motivation a worker may have to accepting change. Oakland and Tanner's (2007) study finds that worker behaviour is important in the change process, yet they only discuss this issue in terms of how important communication in relation to motivating workers to accept change.

Oakland and Tanner (2007) argue that a process-centred approach to organisational change is central to its success, so they developed the organisational change framework consisting of two interacting cycles as displayed in Figure 3-11. According to Oakland and Tanner (2007), the first cycle is readiness for change, which includes understanding the internal and external *drivers of change* so that the *need for change* can be understood and articulated. *Leadership and direction* then turn this need into expectations (aims, objectives and so on) with *planning* then being undertaken. Thereafter, organisational processes are used to support the change (although they may need to be modified, depending on the change). Implementing change is the second cycle, in which the organisational processes dictate the way the *organisation and resources* work: "Performance measures and technology then support the organisation's systems and controls" (Oakland and Tanner, 2007, p. 17). Everything in this cycle drives worker behaviour, which then returns to the processes, because the "behaviour is what makes the processes work or not" (Oakland and Tanner, 2007, p. 17).



**Figure 3-11: The Organisational Change Framework (Oakland and Tanner, 2007, p. 16)**

This framework makes no mention of any underlying intrinsic motivation, so it must be assumed that all workers are passive and reactive because, as stated above, they are all motivated by the processes of the organisation. Intrinsic motivations underlying behaviour, however, need to be understood to ensure long-term behavioural change is undertaken as part of a change process. Currently, these models fail to consider underlying worker motivation.

Section 3.8 has thus far presented an overview of some of the best-known and most widely-cited change management theories and models. Although none of these recognises intrinsic motivation, a combination of these theories with the management theories discussed in Section 3.8.4 has been used to guide this research project. This is achieved by using a people approach to change, recognising resistors to change; and drawing on some aspects of the models above as implementation techniques for the empirical work undertaken in this study.

While managing the change process is important, overall organisational management style is also an important factor for ensuring success (Gilley et al. 2009; Helms-Mills et al. 2009; Oakland and Tanner, 2007). It is therefore necessary to undertake a brief review of the management theories particularly suited to organisational change before combining all the material discussed.

#### **3.8.4 Management Theories**

Management style plays an important role in motivating employees to change. For example, Likert (1967) explains how the participatory styles of management, such as McGregor's (1960) Theory Y (discussed below), is one of the most successful styles of management used in organisational change studies. This view is supported by Deci and Ryan (1985) who have found that participative methods of management are effective in improving worker motivation and as reported in Ali et al. (2016) is one of the best methods of reducing resistance to change.

As outlined in Section 3.3.1 one of the classical management theories was termed 'scientific management' where organisations were viewed as being machines and systemic in nature (Burke, 2002, Wagner-Tsukamoto, 2007) and where workers were only motivated by money (Helms-Mills, et al. 2009). Mayo's Hawthorne studies led to the realisation that "money was not the sole motivator for workers" (Helms-Mills et al. 2009, p.27) and at this point, according to Morgan (1997), worker motivation became a significant issue for researchers in the management field.

Dissatisfaction with scientific management approaches to change resulted in the development of employee-centred theories such as socio-technical systems, developed in the late 1940s and early 1950s in Europe and Scandinavia, and at around the same time theories of organisational development were developed in the US (Burke, 2002; Gardner and Ash, 2003). Contingency theories also became popular during the 1950s and 1960s, as a result of "studying the impact of technology on job design and employee motivation and productivity" (Helms-Mills, et al. 2009, p. 28). These employee-centred theories have provided a framework for operationalising the human relations approach to management (Helms-Mills, et al. 2009).

The human relations approach to management has evolved over time from ‘personnel management’ to become ‘human resource management’ (HRM) as human resources became integrated with strategic planning activities in organisations, alongside financial management, production management, marketing management and technology management (Guest, 1987). Mayo’s Hawthorne studies provided the foundation for the human relations movement with the realisation that productivity, satisfaction and motivation were all interrelated (Latham, 2007). HRM has its roots in organisational psychology, paying particular attention to motivation theories (Guest, 1987). It is the human relations approach, particularly the area of worker motivation, which is most relevant for this research project.

Miner’s (1984) survey of theories in the management field (also known as the organisational science field) resulted in a list of 35 theories (out of 110 potential candidate theories) being rated on their validity and usefulness. All the theories which rated highly on both validity and usefulness were motivation theories from the predominantly psychological discipline (Miner, 1984). A selection of theories based on area and domain name has been broken down into the primary theorist’s predominant discipline as outlined in Table 3-9.

**Table 3-9: Selection of theories from the management field (adapted from Miner, 1984)**

Domain Name & Theory	Theorist	Predominant Discipline
<b>Organisation Development</b>		
Contingency Theory of Organisation	Paul R. Lawrence Jay W. Lorsch	Organisational Behaviour Organisational Behaviour
Control Theory	Arnold S. Tannenbaum	Psychology
Theory of system 4 and 4T	Rensis Likert	Psychology
<b>Structuring</b>		
Classical Management Theory	Henri Fayol	Engineering
Decision Making concepts and constructs	Herbert A. Simon James G. March Richard M. Cyert	Political Science Political Science Economics
Technological Determinism	Joan Woodward	Sociology
<b>Leadership &amp; Supervision</b>		
Contingency Theory of Leadership	Fred E. Fiedler	Psychology
Path-goal theory	Robert J. House Martin G. Evans	Management Organisational Behaviour
Theory X and Theory Y	Douglas McGregor	Psychology
<b>Motivation</b>		
Expectancy theories	Victor H. Vroom Lyman W. Porter Edward E. Lawler	Psychology Psychology Psychology
Job-Characteristics theory	J. Richard Hackman Greg R. Oldham	Psychology Psychology
Motivation-hygiene theory	Frederick Herzberg	Psychology
Need hierarchy theory	Abraham H. Maslow	Psychology



Although this survey commenced in 1977 and ratings were given between 1981 and 1982, Miner's work is still relevant as an important snap-shot of how the field developed up to that point in time. Burke (2002) supports Miner's survey by listing 10 theories from psychology and organisational behaviour most appropriate for organisational change and development. At the individual level, Burke (2002) lists theories by Maslow, Herzberg, Vroom and Lawler, and Hackman and Oldham. At the group level or supervision/leadership level, Burke (2002) lists Lewin's 3 stage model and McGregor's Theory X and Theory Y among others; and at the highest level of organisational aggregation, he also lists Likert's Theory of System 4. Burke (2002) also notes that using a combination of these theories enables a better understanding of organisational change.

Miner (1984) showed that the organisational development and structuring domains (listed in Table 3-9) focus on macro (organisation-wide) issues where "the role of the person in the change process is minimised" (George and Jones, 2001, p. 420). By contrast, the motivation and leadership/supervision domain areas focus on individual and worker concerns; also referred to as micro-organisation issues (Miner, 1984). It has been suggested that mixing the levels of analysis "may be useful in research and theory on information technology and organizational change" (Markus and Robey, 1988, p. 594), although, "...models and theories of change and inertia at higher levels of analysis must be informed by an understanding of change at the individual level of analysis..." (George and Jones, 2001, p. 421).

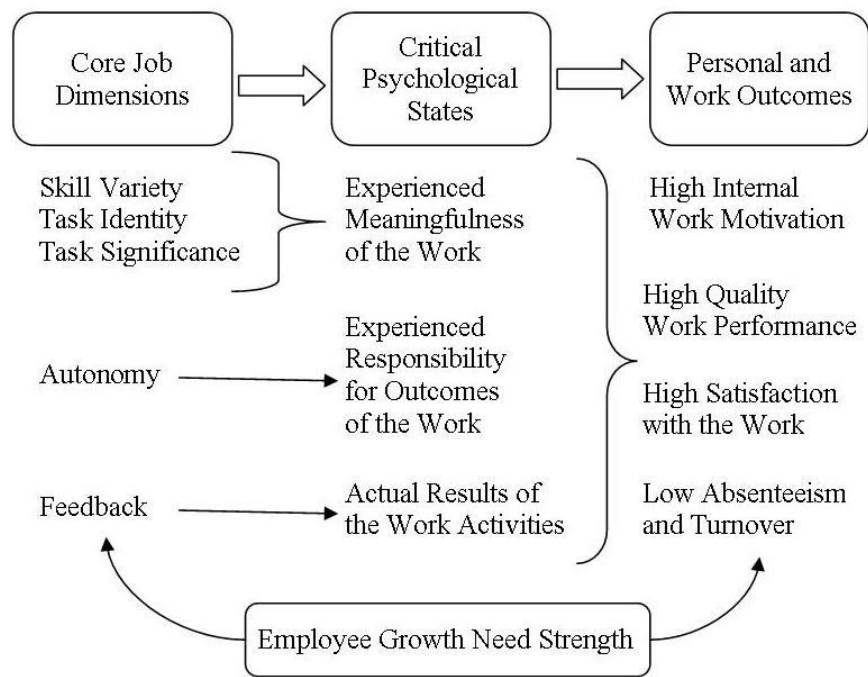
Since this research project is concerned with maintaining (and potentially enhancing) the intrinsic motivation of workers during an ICT-enabled organisation change, a micro-level analysis of a worker's motivation to accept ICT and change is obviously needed.

In an effort to understand change at the micro-level those theories relating to the leadership, supervision and motivation sections of Table 3-9 above are the most relevant. From the motivation section of Table 3-9, overviews of Maslow's Need Hierarchy Theory, Herzberg's Motivation-Hygiene Theory and Vroom's Expectancy Theory have already been presented in Section 3.3. Hackman and Oldham's Job-Characteristics Model and McGregor's Theory X and Theory Y are presented below.

### ***Job Characteristics Model***

Hackman and Oldham (1976) created the job characteristics model as a basis for work redesign when considering staff motivation as a factor in increasing productivity. These authors consider Herzberg's motivation-hygiene theory the most influential theory for work redesign at that time, although it did not allow for "differences among people in how responsive they are likely to be to "enriched" jobs" (Hackman and Oldham, 1976, p. 251), which relate to an individual's growth need strength. Workers who demonstrate higher needs for growth (self-actualisation) would prefer enriched jobs which offer higher motivating potential (Hackman and Oldham, 1976).

The job characteristics model illustrates the relationship between job characteristics and a worker's intrinsic motivation to perform effectively in his/her work, leading to improved productivity (Hackman and Oldham, 1976). The model links core job characteristics to a worker's psychological state to produce behavioural outcomes (Hackman and Oldham, 1976; Helms-Mills et al. 2009) as shown in Figure 3-12. Behavioural outcomes, it seems, are indicators of successful long term change.



**Figure 3-12: The Job Characteristics Model of Work Motivation (Hackman and Oldham, 1976)**

### ***Theory X and Theory Y***

Theory Y's assumptions about human motivation were developed by McGregor using Maslow's theory of motivation to structure his observations in an organisational situation. Some of the assumptions of Theory Y are that:

- people generally do want to work (depending on controlling conditions);
- work may be a source of satisfaction;
- people will use self-direction and self-control to reach committed objectives;
- commitment to objectives is a function of the rewards associated with achievement (e.g.: the satisfaction of self-actualisation); and
- People learn to accept – and some seek – responsibility (McGregor, 1960).

Theory Y implies that a participative management approach based on these assumptions will be effective in positively motivating employees unleashing energy, creativity and innovation (Deci and Ryan 1985; McGregor 1960). Despite its long history, Theory Y is still not employed correctly, or at all, in most organisations. McMillian (2008) argues that management continues to think of organisations using a machine metaphor and believes this gives organisations “false expectations about the efficacy of change tools and accompanying strategies and interventions” (McMillian, 2008). In fact, traditional approaches to management (such as Theory X) are still widely used (Helms-Mills et al. 2009; Solanti et al. 2007).

One of the main reasons why traditional approaches to management are still being used is because management assumptions (the basic mindsets) (Solanti et al. 2007; Whitely and Whitely 2007) about human motivation and behaviour have changed very little over time. These assumptions are consistent with Theory X:

- that people will avoid work if they can;
- the employees dislike work and must be controlled and coerced;
- people generally want security and direction; and
- people will avoid responsibility (McGregor, 1960).

These assumptions can still be seen in policies and procedures in many organisations today, reflecting the attitude that an individual’s needs are not considered above organisational requirements (McGregor 1960). One example is the use of performance appraisal systems which direct workers to meet organisational goals and reward or punish them judged on how well they have done so. Another example is electronic monitoring of employee performance through enterprise resource planning (ERP) systems, where automated data (such as time on task) is collected and reported back to managers (Morris and Venkatesh 2010). Monitoring of employees’ times on task occurred in Scientific Management in the early 1900’s (see Section 3.3.1) and in fact “Taylor was indicted by the US House of Representatives and accused of treating employees like machines” (Helms-Mills et. al. 2009, p. 26) which led to laws banning the use of stopwatches for task monitoring (Helms-Mills et al. 2006). Clearly, little has changed over the years and many organisations (and, indeed, not a few researchers) continue to assume that people need to be controlled and directed as outlined in Theory X.

One of the clearest examples of a reintroduction of the traditional management approaches can be seen in the public sector, where a compliance model of the role of government was first introduced during the time of scientific management (Bourgon, 2009). During the 1980s and 1990s however, government’s roles changed with the introduction of New Public Management practices requiring them to be more flexible. In response to this, as well as creating partnerships with the private and non-profit sectors:

“Some introduced innovations by creating ‘framework laws’ that gave public administrators a higher degree of discretion with which to address a diversity of needs. Most used the power of modern communication technologies to increase productivity and quality of services. Almost all deepened their reliance on the scientific management paradigm, pursuing detailed measurement of the inputs, activities and outputs of public service organizations” (Bourgon, 2009, p. 311).

Managers are attempting to use participative management techniques during organisational change projects, as can be seen in the models and frameworks above, to increase the motivation of staff to undertake changes. Participation in the change process, in terms of agreeing to common goals for example, is designed to raise a worker’s perceived self-determination and thus strengthen intrinsic motivation (Osterloh and Frey, 2000). However, motivation will only be increased “when agreements about the goals serve primarily as self-control and self-obligation” (Osterloh and Frey, 2000, p. 543). Other participative techniques include: communication; information sharing; consultation, feedback and training (Ali et al. 2016).

Gagne et al. (2000) claim that more research is needed on how to apply participative management techniques to ensure successful organisational change. Other researchers say that using participative techniques is likely to be insufficient during organisational change “where (it) threatens established practices that have deep significance to those affected” (Boddy and Macbeth, 2000, p. 298). However, McGregor (1960, p. 115) had said “the mechanics of the participation are relatively unimportant; the underlying assumptions about human beings which are reflected are crucial”. Just as in understanding motivation, participative management and its techniques should be based on the underlying theoretical assumption that people are active organisms. Such an approach allows appropriate techniques to be successfully employed.

### **3.9 Chapter Summary**

This literature review has provided a synthesis of complex topics including: ICT acceptance; motivation; and organisational change across the Information Systems, Psychology, Economics and Management disciplines. Questions 1 and 2 as outlined in Section 3.1.1 have now been answered by means of this synthesis and interpretation of the literature presented in this Chapter.

Research question one (1) *What is technology acceptance and how important is motivation for technology acceptance* was answered by combining the seemingly separate research streams of ICT adoption and acceptance with ICT implementation projects and ICT-induced organisational change. This Chapter has shown that:

- The Innovation and Diffusion, the Implementation and the Technology Acceptance research streams within the IS field have very few linkages, despite all three playing a major role in the success of ICT acceptance;
- TAM (and its variants) is still the dominant technology acceptance model yet it simplifies the motivation concept which plays a crucial role in successful technology acceptance;

- Motivation is a complex concept and the basic fundamental needs (universal in all people) underlie motivation and impels behaviour;
- We should be focussing on the types of motivation, using the motivational continuum, to view how intrinsic motivation could be crowded-out as a result of implementing an IS and the associated organisational change that goes with it;
- Motivation to undertake and continue with organisational change is imperative for the initiative to be successful, yet most change management models do not recognise intrinsic motivation; and
- Combining change and management models and theories together with motivation theories can result in a more participative management approach for leading change as demonstrated with Theory Y.

This Chapter initially sought to understand what technology acceptance is and how important a role motivation has played in the previous technology acceptance literature. The literature on technology acceptance, in particular TAM (and its variants), has considered motivation but not to the extent required for this study. TAM uses Perceived Usefulness (PU) and Perceived Ease of Use (PEOU) as the two basic determinants to explain user behaviour and from this a multitude of variables have been added over time. Section 3.2.3 reviewed a selection of those variables and has identified the underlying motivation driving those behaviours based on the basic psychological needs all people possess. In effect, this has conceptualised those technology acceptance variables as basic needs which are intrinsic motivators.

As this review has shown, motivation is not only a complex concept, but also one which has been over-simplified in the technology acceptance literature. This Chapter has highlighted that, rather than focusing on the many variables which have been used over the years in the various technology acceptance models, we should instead be focusing on the underlying motivations of users to accept and make use of technology. Understanding ICT acceptance and the importance of motivation to accept both the IS being implemented and the associated organisational change is necessary if an organisation hopes to make use of participatory techniques that are autonomously supportive and which will likely reduce the crowding-out effect.

Given that motivation is such an important factor for NPOs it seems reasonable to maintain, if not enhance, intrinsic motivation while implementing a new ICT in an NPO – and thus the concept of motivation was reviewed in Section 3.3. From an IS perspective, the review of motivation was comprehensive and it has been shown that the extant technology acceptance literature (over-) simplified the motivation concept. For the purposes of this study the literature review focuses on the organismic (need) theories of motivation. These intrinsic needs form the basis for all human behaviour and it is from that point of view that consideration of how the satiation of those needs leads to technology acceptance, and the associated organisational change that goes with implementing a new ICT, will be investigated in the following empirical research chapters (Chapters 5, 6 and 7).

As discussed in Chapter 2. and above, NPOs are not like the private or Government sectors – yet it is increasingly expected that they will conform to those sectors’ standards to provide the necessary accountability for providing social services on behalf of the Government. It has been argued that traditional approaches to management in NPOs are not effective because of differences in their mission, their structure and the motivation of their workers. Similarly, traditional approaches to managing organisational change are not as effective in NPOs. In Section 3.4 I have found that when changes are seen to be controlling this crowds-out the motivation of workers – something this study is designed to reduce. With this in mind, this Chapter has also reviewed how important motivation can be in terms of the organisational change and change management literature; and how researchers could use and/or adapt existing methods to reduce the crowding-out effect.

Research question two (2) *What is motivation and how does organisational change affect it* has been answered by defining motivation (relevant to this study) by focussing on the Organismic (Need) theories of motivation. As a basis for understanding motivation, evidence was provided to support the assertions that:

- needs are universal and underlie motivation which impels behaviour;
- we cannot directly motivate a person to satisfy his/her needs, we only create conditions to help individuals satisfy their needs;
- in this thesis the focus was on the types of motivation (intrinsic and extrinsic) using the motivational continuum as set out in Self Determination Theory (SDT); and
- the undermining effect or crowding-out (MCT) of intrinsic motivation was relevant to this research project.

Although MCT has been discussed in both organisational settings and in voluntary areas, it has not previously been used as a basis for understanding or measuring the effects of organisational change, particularly in the non-profit sector; nor have the ways in which intrinsic motivation can drive organisational change, or how organisational change can enhance (crowd-in) intrinsic motivation been analysed. This research project therefore provided new theoretical and practical contributions in both these areas.

The outcome of this detailed literature review has identified a theory-supported strategy which forms the basis for a method of designing and implementing an ICT-induced change in an NPO, which led towards an answer to question 3 of this research study by combining change and management models and theories together (particularly focussing on Theory Y) with motivation theories (organismic and motivation crowding theories). Combining these theories appears more likely to result in an effective participative management approach for leading change and for the successful acceptance of a new ICT system without jeopardising intrinsically motivated non-profit sector employees. This approach (the framework of ideas for this thesis) was transformed into an action research study as outlined in the next chapter (0) where the problem situation is defined as implementing an ICT-enabled organisational change in an NPO without alienating the organisation’s intrinsically motivated staff.

## **Chapter 4. Research Methodology**

This Chapter does not follow the traditional format of an information systems research methodology chapter. Rather I have chosen to give an outline of the contribution made thus far in the thesis to the Information Systems field. This is achieved by re-stating the research questions and demonstrating how the contribution has been made up to this point within this thesis.

Contained within this chapter is an overview of the pilot study which was undertaken with Uniting Communities (UC) prior to this research project. The results of the pilot project demonstrate in a real world context, the reason for undertaking this research project. Discussing the pilot project in this chapter is appropriate as it demonstrates to the reader how the methodology was chosen for this research project through the use of a practical example.

The structure of the chapter is as follows:

- An introduction as to why the existing theoretic frameworks are unreliable or appear generally to fail;
- One major component of the research: the non-empirical theory development by analysis and induction;
- A section focussing on the research by using the research questions. This section includes a review of the contribution already made in this thesis. The final research question is re-phrased so as to focus on the problem situation of the present project.
- The second major component of the research: the empirical theory testing and refinement, which is then presented as a means of introducing the partner organisation and the pilot project which has led to this research project.

The remainder of the chapter is a more traditionally structured information systems methodology chapter, in which the research design and data collection methodology are outlined.

### **4.1 Introduction**

To reach the key objective as outlined in Section 1.2, this thesis explores the basic question (for the Information Systems field, at least) of how to effectively conduct an ICT-induced organisational change (in particular) in a non-profit organisation (NPO). The focus of the study is, simultaneously, on the narrower issue of ICT acceptance as well as the broader issue of behavioural change within the workforce while maintaining motivation.

As shown in Chapter 3. there is, of course, a wide range of literature on the focal study. The ‘conventional wisdoms’ have been shown to be effective guides, in the sense of theoretic frameworks which support a range of approaches and/or methods to support broad classes of ICT adoption and organisational change problems.

Nonetheless, as outlined in Chapter 2. , there exists a class of organisations for which approaches based on these theoretic frameworks are unreliable at best and, at worst, appear generally to fail. There can be only three potential explanations for this phenomenon. Either:

1. Attempts at the deployment of ICT and the management of the consequent organisation change have been:
  - 1.1. Poorly designed (i.e. they have not been properly designed with respect to the established theory); and/or
  - 1.2. Poorly executed (regardless of the quality of the design); or
2. The theory does not apply or is more likely incomplete (in a meaningful way), in terms of the context of the change.

It is generally the case that publically (and even privately) available data concerning failures are in very short supply. It was suggested in Chapter 3. that 1.1 and 1.2 are both viable explanations for the failure of ICT-induced organisational change in the sense of: being poorly designed (for example failing to recognise underlying motivation); and poorly executed, as argued by Gilley et al. (2009, p.75) who state that: “organisational leaders lack a clear understanding of, or ability to engage the steps necessary to implement change successfully” regardless of the quality of design.

This study has, however, focused instead on explanation 2 and seeks to identify why the theory might not apply and/or why it might be incomplete in the conventional wisdom which (i) guides technology acceptance and an ICT-induced organisational change and; (ii) relates to the uniquely important characteristics of the Non-Profit sector.

The research reported in this thesis has two major components:

1. Non-empirical theory development by analysis and induction; and
2. Empirical theory testing and refinement.

## **4.2 Theory Development by Analysis and Induction**

The non-empirical work has been reported in Chapters 1 – 3 of the thesis and a brief summary of those chapters is recapitulated in this section.

As outlined in Section 2.2 the introduction of New Public Management (NPM) practices into the public sector is having a profound effect on NPOs. The growing dependence of NPOs on Government funding, together with increased competition from private sector organisations, based on contracting through arrangements such as Service Agreements (Cunningham, et al. 2013; Considine 2003; Kramer 2000; Milligan 1998) brings with it the added activity of governmental monitoring, evaluation and oversight (Milligan, 1998; Ryan, 1999, Soltani et al. 2007; Woolford and Curran, 2011). As a result, many NPOs have been forced to develop an ICT capacity in order to gather the appropriate data for various government reporting obligations as a requirement of providing community services on behalf of the government (Denison and Johanson, 2007).



Chapter 2. explains that NPOs are different because they are “driven by their ‘community purpose’” (Productivity Commission, 2010, p.15) which makes NPOs operate in a different way from other organisations. It was also shown that not all business practices from the private sector are suitable for use in the non-profit sector, due to differences in authority structures and mission, so that traditional forms of management from the private sector are difficult to implement within an NPO.

Section 2.3 outlined the crucial role intrinsic motivation plays within NPOs (see, for example, Leete, 2000; Productivity Commission, 2010) and showed how NPOs rely on an intrinsically motivated workforce (both paid and volunteer) (Benz, 2005; Frey and Jegen, 2001; Leete, 2000). An example of the difficulties faced by NPOs, which typically have more highly intrinsically motivated staff, in trying to maintain worker motivation during an organisational change was presented in relation to the impact of NPM on NPOs and their staff, using Motivation Crowding Theory (MCT) as the basis for understanding the impact of change on worker motivation.

Having identified the unique and critical characteristics of NPOs, which demonstrated that not all business processes from other sectors could be used in implementing an ICT-induced organisational change, it is clearly important that barriers to change and ICT acceptance, (such as employee resistance) must be dealt with in such a way that the intrinsic motivation of staff, clients, volunteers and other stakeholders is preserved to ensure success.

Taking into consideration the unique characteristics of NPOs and the importance of worker motivation, Chapter 3. provides an extensive review and synthesis of the literature relating to ICT acceptance; organisational change; and motivation. As outlined in that Chapter summary:

- There are few linkages between Innovation and Diffusion, Implementation and Technology Acceptance;
- The Technology Acceptance Model (the dominant model) simplifies the motivation concept;
- The motivation concept is complex – the basic fundamental needs underlying motivation are what impels behaviour;
- A selection of technology acceptance variables was conceptualised as basic needs;
- Traditional approaches to managing organisational change in NPOs are not effective and, if change is perceived to be controlling, this will tend to crowd-out the intrinsic motivation of the NPO’s workforce; and
- Combining change and management models and theories together with motivation theories can result in a more participative management approach for change management, which might reduce the crowding-out effect and increase acceptance.

### 4.3 Focusing the Research

It is anticipated that achieving the key objective of this research project as outlined in Section 1.2 will lead to the development of an autonomously-supportive organisation change implementation strategy suited to the non-profit sector which could also be used across the public and education sectors.

The key research challenge (based on the MCT framework) is to identify and evaluate how an ICT-induced organisational change affects a worker's motivation and, thus, behaviour, in terms of accepting change and the ICT being implemented within a large NPO. To overcome this challenge, the three main themes of autonomous (including intrinsic) motivation, attitudes to organisational change and attitudes to ICT acceptance will be explored. As outlined in Chapter 1. , the three main research questions driving this research are:

- 1) What is technology acceptance and how important is motivation for technology acceptance?
- 2) What is motivation and how does organisational change affect it?
- 3) What change management interventions are autonomously supportive and are these likely to result in increased acceptance of an ICT-induced organisational change?

Questions 1 and 2 above were answered in Chapter 3 by means of the synthesis and interpretation of the literature from a variety of research streams, which has already led to a significant research output of this thesis, as outlined below.

Research question one (1) has been answered by drawing on the implementation and acceptance research streams within the IS field. It was demonstrated in Section 3.2 that technology acceptance (as defined in this thesis) encompasses both individual adoption and usage of the ICT being implemented. It was further argued that motivation plays an important role in the acceptance of an ICT-induced organisational change, as first demonstrated in a review of the TAM literature. However, it was found that the concept of motivation in the acceptance research stream was overly simplified, because the literature failed to recognise the fundamental needs underlying behaviour. In this thesis the motivation concept has been redefined by comparing the TAM variables to the Basic Needs (which underlie all behaviour) (see Table 3-5). Redefining motivation in this way represents a significant contribution of this research project to the IS field.

Research question two (2) has been answered by defining motivation (relevant to this study) in Section 3.3, by focussing on the Organismic (Need) theories of motivation. As a basis for understanding motivation, evidence has been provided to support the assertions that:

- needs are universal and underlie motivation which impels behaviour;
- we cannot directly motivate a person to satisfy his/her needs, we only create conditions to help individuals satisfy their needs;
- in this thesis the focus will be on the types of motivation (intrinsic and extrinsic) using the motivational continuum as set out in Self Determination Theory; and
- the undermining effect or crowding-out of intrinsic motivation is relevant to this research project.

As demonstrated in the previous chapters, the problem situation has been established and described as: how do we maintain worker motivation during change in an intrinsically motivated workforce? The nature of the problem is elucidated by analysing the literature relating to the effects of NPM on NPOs, using MCT to describe the impact of change on worker motivation as an example – thus further demonstrating the relevance of MCT. Chapter 3. identified a theory-supported strategy which forms the basis for a method of designing and implementing an ICT-induced change in an NPO, which leads towards an answer to question 3 of this research study.

In order to answer question 3, it is necessary to reframe the question for operational purposes. The original question was: *What change management interventions are autonomously supportive and are these likely to result in increased acceptance of an ICT-induced organisational change?* From Chapter 3 it is argued that:

- Understanding both ICT acceptance and the importance of motivation to accept the ICT being implemented and its associated organisational change are essential pre-requisites for the use of autonomously-supportive participatory techniques which have the potential to reduce the crowding-out effect; and
- Combining change and management models and theories together with motivation theories can result in a more participative management approach for leading change, as demonstrated by Theory Y.

The problem now is how to test and refine this approach in the field, because there is no third party case study in existence to explore the proposed problem situation. The only effective solution is, therefore, to adopt an interventionist approach to the problem situation. Question 3 has therefore been re-phrased so as to focus on the problem situation and will be demonstrated in the empirical chapters to follow:

3. Can we develop, test and refine an autonomously-supportive organisational change implementation strategy to reduce the crowding out effect on intrinsically motivated staff in an organisation?

I have had access to such an organisational change activity in a representative organisation as explained in Section 0 below. The Partner Organisation in this study is a large non-profit organisation which is experiencing the issues outlined above in implementing an ICT-induced organisational change while working to maintain the motivation of its intrinsically motivated workforce as a result of NPM practices and competitive tendering processes.

Based on the research purpose and challenges discussed above, the remainder of this chapter will describe how the research design was established for this project using the Pilot Project with the Partner Organisation as its basis.

## 4.4 Change Method

### 4.4.1 The Industry Partner

The industry partner in this study, Uniting Communities (UC), is one of the largest non-profit organisations in South Australia providing social services and has a strong reputation for public policy advocacy both state-wide and nationally. Each year UC provides services to approximately 30,000 clients and is supported by over 790 paid staff, almost 600 dedicated volunteers; and 120 contractors.

Uniting Communities was previously known as Uniting Care Wesley Adelaide and, prior to that, as Adelaide Central Mission. The organisation has been established in South Australia since 1901 and was part of the Uniting Care Wesley (UCW) South Australian group which consisted of Adelaide, Port Adelaide, Bowden and Port Pirie. Although they share the same name, each organisation is a separate entity. During the 2012/2013 reporting year UCW Adelaide broke away from this group and became Uniting Communities.

UC is predominantly reliant on government funding to deliver social services to the community. UC's annual financial reports itemise the organisation's income over the period from 2010 as illustrated in Table 4-1. Government Subsidies as a source of revenue have increased from around 63% in 2010 and 2011 to just over 70% for 2013; for UC this represents a significant reliance on government funding.

**Table 4-1: UCW Income Sources (UC Annual Reports 2010-2013)**

<b>Income Source</b>	<b>Consolidated 2013 \$'000</b>	<b>Consolidated 2012 \$'000</b>	<b>Consolidated 2011 \$'000</b>	<b>Consolidated 2010 \$'000</b>
Government Subsidies	35,814	34,582	32,320	28,716
Sale of Goods	3,164	3,714	4,417	4,456
Fees Received	5,353	5,862	4,847	3,891
Donations	507	504	848	1,038
Investments & Other	6,299	6,138	8,838	7,763
<b>Total Income</b>	<b>51,137</b>	<b>50,800</b>	<b>51,270</b>	<b>45,864</b>

As mentioned both in Chapter 2. and above, securing Government funding has become a more competitive process for all NPOs and this is particularly true for UC which runs 104 community service programs across 55 sites in metropolitan and regional South Australia. These demands were further complicated by the introduction of Consumer Directed Care (CDC) from July 1, 2015: individualised client funding packages under which clients receive funding directly and choose their preferred provider for individual social services (see Abramovitz and Zelnick, 2015).

The Partner Organisation, although a large organisation, is representative of NPOs more generally in that it is significantly reliant on government funding and is thus a suitable partner for this study. With the introduction of NPM principles UC is also experiencing change in terms of a shift in accountability from government to itself via the NPM funding agreements and reporting requirements – resulting in a loss of worker control and integrity (refer to Chapter 2. ).

These changes are, in turn, affecting both the way services are provided and the motivation of staff (see Chapter 2. for a fuller explanation) and, since the motivation of staff is particularly important in NPOs which are more intrinsically motivated (Benz, 2005; Mirvis and Hackett, 1983; Ridder and McCandless, 2010), it is important that barriers to change and ICT acceptance be dealt with in such a way that the intrinsic motivation of staff, clients, volunteers and other stakeholders is preserved.

#### **4.4.2 The Pilot Project**

The importance of worker motivation and its preservation during an ICT-induced organisational change was evident during a pilot project undertaken with UC. The project was conducted over a six-month period during 2008 under the oversight of Professor Paul Swatman within the Youth Services department of Uniting Communities as summarised in Howard and Swatman (2009a).

Based on one of the underlying principles outlined in the project service agreement:

- The nature of the UC workforce was a core concern. UC made it clear they seek to retain an empowered workforce – solutions must NOT be seen as being imposed upon, but rather should be embraced by the workforce.

The investigation and design method was strongly influenced by the foundations of Soft Systems Methodology (SSM) – which explicitly acknowledges that actors within an organisational situation validly see that situation from differing perspectives. The focus of the project was on the mutual interaction of an organisational initiative and the motivation of the workforce.

The pilot study was undertaken to define an effective uniform electronic document tracking and management system leading to:

- The definition of a file system for electronic documents;
- The development of a migration strategy for the organisational context; and
- A demonstration, in the context of the project and the existing workforce, of the effectiveness of the pilot system and migration strategy.

The original initiative was undertaken following the successful completion of a pilot implementation, within a single department, of a “whole of organisation” policy-level/conception change project conducted by myself. The extensive pilot project was documented in a Masters student project report (Howard, 2008) which was awarded the BAE Systems prize for the most outstanding CIS project at UniSA in 2008; and reported in both an internationally published research paper (Howard and Swatman, 2009a) and in Lazic (2008)<sup>1</sup>. The research proposal for this thesis was presented at the 20<sup>th</sup> Australasian Conference on Information Systems (ACIS 2009) Doctoral Consortium where it was awarded 3<sup>rd</sup> place in the Speed Thesis Competition held by the Australian Council of Professors and Heads of Information Systems (ACPHIS). Howard and Swatman (2009b) was published as a direct result of the first draft of the research proposal and Howard, Marshall and Swatman (2010) was published as result of the final version of the research proposal.

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<sup>1</sup> Miro Lazic’s Master Thesis was, undertaken at InSyL while he was on exchange from the University of Mannheim

Using change management techniques and other business practices from the private and public sectors may not be sufficient for NPOs (Alexander, 2000; Cunningham et al. 2013; Dolnicar et al. 2008; Productivity Commission, 2010), not merely because of the differences between the sectors, but because of the high intrinsic motivation of staff typically found in NPOs as outlined in Section 2.3. According to Word and Park (2009, p. 108) “substantial differences can also be observed in the characteristics of employees among the public, non-profit and private sectors”. They argue that non-profit workers are more service oriented, find their jobs less boring, and demonstrate greater work effort than public and private sector workers; and discovered that non-profit and public service workers, who serve a public interest, of community, state, nation, regardless of what sector they work in (Word and Park, 2009) and therefore, were more likely to volunteer than public sector employees, which they attribute to differences in motivational factors and to the culture and structure of NPOs (Word and Park, 2009). These authors also found that non-profit managers have a higher level of job involvement than public sector managers and that “red tape, hierarchical job authority and hierarchical culture all have a negative relationship to job involvement...(suggesting) that public organisations need to be mindful about transferring bureaucratic constraints to the non-profit sector” (Word and Park, 2009, p. 126).

As with Hindle et al. (1995), who used a health services management framework in their multidisciplinary action research study, the present study has identified the differences (to other sectors) and changes (brought about by NPM) occurring in the non-profit sector as a suitable framework to influence the research method. By considering the effects of imposed changes in NPOs brought about by NPM and the motivational differences displayed by non-profit workers it was possible to study the effects of these changes on the intrinsic motivation of non-profit workers.

Throughout the pilot project with UC a participatory action research approach (drawing on for example Puri and Sahay (2007); Wagner and Piccoli (2007)) was taken. In particular, I paid special attention to the social context within which the electronic document management system was being implemented. The intervention in the pilot project took a form very similar to that of a conventional consultancy project, which provided freedom to work within the organisation and study the area of concern, (i.e. the effects and relationships between ICT acceptance, organisational change and intrinsic motivation).

Data collection in the pilot study mainly consisted of informal group and individual conversations and semi-structured interviews. Trust was built between myself and staff through one-on-one and group conversations, allowing participants to speak freely and confidentially to me, not just about the problem situation but also about the organisation and its culture as a whole, which enabled me to gain a rich and multi-perspective appreciation of the problem situation. This gave the participants a greater perception of influence – in addition to actually *having* a substantial influence – on this aspect of their job, and I saw a strengthening of an apparently intrinsic motivation to participate in the project.

The data gathered during the analysis phase of the pilot project described above was analysed and used to identify the main areas of concern and their current processes. Following the SSM approach, a Rich Picture was drawn to express the problem situation from multiple perspectives and was presented in the Interview Findings Report produced in May 2008; it was also used as a focus of facilitated discussions during several group meetings where it appeared to be perceived as supporting non-threatening, non-blaming discussion.

Wagner and Piccoli (2007) argue that despite every effort to use participatory design, focusing on who to involve in a project rather than when to involve them, can be detrimental. They argue that users will only become truly committed to the project when the change will have an impact on their work and the reality that new work practices will be implemented is imminent. An example of this from the pilot project is demonstrated below.

Through the analysis and design phases of the pilot, I had gained the clear impression that the project was being well received by every member of Youth Services whereas, in fact, many staff were (as Wagner and Piccoli (2007) put it) only “acting as if they were engaged” in the project. During the training stage, for example, there was clear evidence that some staff, recognising the imminent transition, “lost” confidence in the effectiveness/workability of the intended change. All parties involved within the change process – management, affected staff and the change team – participated in an intensive review. It quickly became apparent during this review that:

- the system itself was not the problem but, rather, that the changes to informal organisational power structures (arising from acknowledged expertise in areas where importance/impact would be reduced) were having a negative effect on (were crowding-out) the intrinsic motivation of some experienced staff members;
- there was also a danger of cognitive overload amongst staff as realisation of the system’s full impact on work practices became apparent.

While at first sight the difficulties encountered during the implementation phase might seem entirely negative, it is important to reflect on the way in which – and the speed with which – these difficulties were resolved. The resolution process was based on consultation, education and participation. It was of fundamental importance that the organisational, departmental management and I – as well as the staff – participated together in the change process; and that trust had been built between the change agents and those affected by the change.

It is particularly interesting to note that the issues which arose during the implementation phase did not adversely affect enthusiasm, which existed throughout the organisation, to be part of the next phase of the project – nor did their impact in the immediate context persist beyond the review process. We hypothesised that, irrespective of the level of participation existing within the organisational change process, moments of crisis – which might best be described as crises of confidence – can be expected. We drew the conclusion that, in the pilot study, the issues which arose during the implementation phase were not “swept under the carpet” but were, in fact, fully and satisfactorily resolved by the additional participative action undertaken; and further hypothesise the general effectiveness of this strategy.

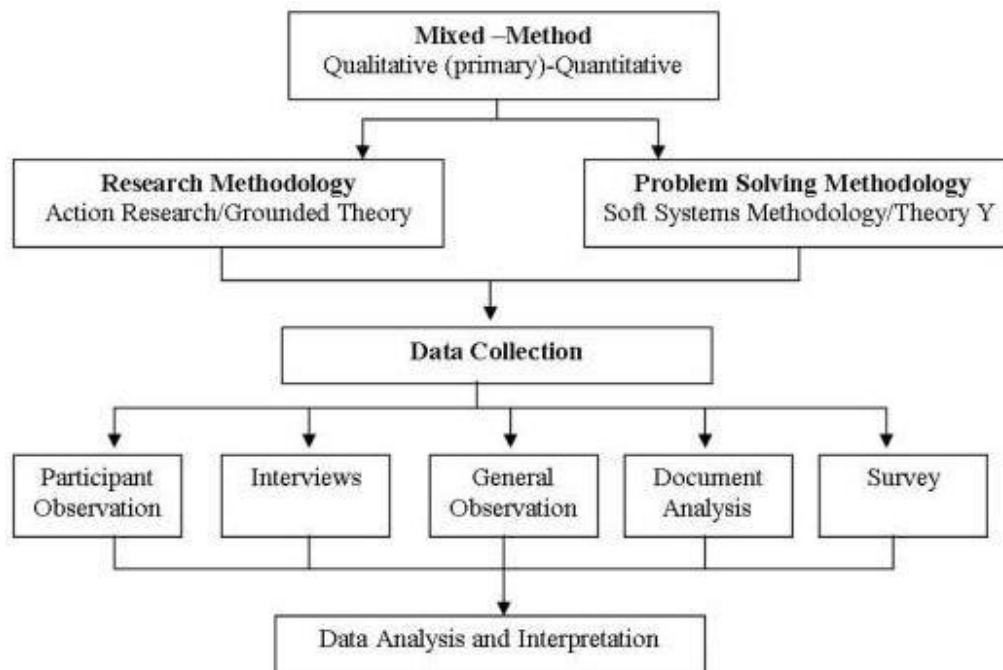
In the approach outlined above the actors directly affected were encouraged to take ownership of the design, resulting in less resistance to change (Ali et al. 2016); greater commitment to the project; and increased job satisfaction (Wagner and Piccoli, 2007). The study had a particular focus on whether tension between the introduction of more formalised systems and intrinsic motivation of the workforce in NPOs (highlighted in Benz (2005)) is characteristic – or whether organisational change can lead to increased intrinsic workforce motivation.

## **4.5 Research Design**

The proposed approach to this study is based on a combination of the theoretical findings from the literature review and learning and experiences gained from the pilot project. The pilot project which formed the impetus for this study took a form very similar to that of a conventional consultancy project and was strongly influenced by the principles of SSM, where the focus was on the mutual interaction between the change itself and the subsequent motivation of the workforce, as documented in Howard and Swatman (2009a) and outlined above.

The remainder of this section will show how the various methodologies and theories, drawing on the action research spectrum, incorporating the dual cycle of action research and grounded theory (to structure the data) typical of qualitative studies (McNabb, 2008; Myers, 1997) have been drawn together to create the most appropriate research design for this type of study, beginning with the mixed-method as shown in Figure 4.1.





**Figure 4-1: Research Design using the dual action research approach (as outlined below)**

#### 4.5.1 Mixed-Method

Given the action research approach within UC, as outlined above, it can be concluded that this is primarily a qualitative case study research method and that the data collected throughout the project will be analysed using an interpretive approach, allowing me to gain deep insights into an ICT-induced change processes within an NPO and its effects on worker motivation.

This empirical research followed a mixed-method (Chen and Hirschheim, 2004; Venkatesh et.al., 2013) design, particularly using the dominant/less-dominant design as outlined in McMurray et al. (2004), whereby qualitative approaches were the primary data collection techniques, together with a survey which was used as a secondary data collection technique (see Kaplan and Duchon, 1988 as an example of using a combined approach). In this study a sequential mixed method approach (Venkatesh et al., 2013), is used (qualitative study followed by a quantitative study). According to McNabb (2008), qualitative research typically embodies the use of one or more from a variety of possible theories underpinning the research approach, utilising varying approaches and methods; and gathering diverse perspectives from participants (among other things). The essence of qualitative research is its focus on the views and opinions of human beings, making its findings richer – but less generalisable – than quantitative research, which is objective in nature and typically makes use of a survey design approach to data collection, so that data can be effectively compared and contrasted and, thus, provide generalisable findings (Chen and Hirshheim, 2004).

Venkatesh et al. (2013, p.22) “encourage IS researchers to engage in mixed methods research to provide rich insights into various phenomena and develop novel theoretical perspectives”, as this research study does. The authors outline a set of guidelines for conducting mixed methods research and argue that this approach “is more in line with methodology combination” (Venkatesh et.al., 2013, p.23) as shown below. They argue, that while ICT implementations is an important research area within the IS research community, both qualitative and quantitative studies (used independently) do not offer the breadth or depth of stakeholder reactions, whereas a mixed method provides a holistic understanding (Venkatesh et al. 2013), which is why this approach has been selected for this study.

**Table 4-2: Purposes of Mixed-Method (adapted from Venkatesh et al., 2013, p. 26)**

<b>Purposes</b>	<b>Description</b>
Complementarity	Mixed methods are used in order to gain complementary views about the same phenomena or relationships,
Completeness	Mixed methods designs are used to make sure a complete picture of a phenomenon is obtained.
Developmental	Questions from one strand emerge from the inferences of a previous one (sequential mixed methods), or one strand provides hypotheses to be tested in the next one.
Expansion	Mixed methods are used in order to explain or expand upon the understanding obtained in a previous strand or a study.
Corroboration/Confirmation	Mixed methods are used in order to assess the credibility of inferences obtained from one approach (strand).
Compensation	Mixed methods enable compensating for the weaknesses of one approach by using the other.
Diversity	Mixed methods are used with the hope of obtaining divergent views of the same phenomenon.

There are several purposes for using a mixed-method approach as summarised by Venkatesh et al., (2013), who also provides examples of prior IS research, as briefly outlined in Table 4.2. The primary purpose for using mixed methods in this study is developmental – an approach in which one strand, the qualitative phase, provides questions or propositions to be tested in the next strand (the quantitative phase).

#### **4.5.2 Soft Systems Methodology**

The framework of ideas which guides this research is based on awareness that Soft Systems Methodology (SSM) is particularly suitable for exploring people-centred problems which do not respond well to methods underpinned by goal-seeking models from the management science literature (Checkland, 1999; Mingers, 2000; Jackson, 2003). Checkland regarded the practice of management as relationship maintaining, while management literature was (and partly still is) dominated by the goal-seeking paradigm, as shown in the work of Nobel Prize winner Herbert Simon (Jackson, 2003). Checkland’s approach is therefore more suited to the non-profit sector, in which maintaining a human relationship is of paramount importance.

SSM is seen as an appropriate methodological base for intervention in and study of NPOs, particularly because of the crucial role of the consultation process and staff participation in organisational change that occurs within NPOs (Chapman, 1998). SSM has previously been demonstrated as an effective tool for the study of NPOs (Shalhoub & Qasimi, 2005; Bhattacharjya & Venable, 2006a) and, in the pilot project, once again provided confirmation of its suitability in this context. In this study SSM – enhanced with greater than usual and more explicit attention to user involvement and change ownership development – was used as the basis for a problem-solving methodology. Some principles from SSM, such as exploring the real-world problem situation (Checkland, 2000), formed a foundation for an exploration of the entire process of an interaction between the nature of an organisational change and the motivation of that organisation's workforce.

### **4.5.3 Theory Y**

Theory Y (as outlined in Section 3.8.4) formed the basis for a participative management approach which was used to help manage the organisational change process as part of the problem solving methodology. Theory Y implies that a participative management approach will be effective in positively motivating employees, thus unleashing energy, creativity and innovation (Deci and Ryan 1985; McGregor 1960). For example, rather than using authority as the primary control mechanism in an organisation Theory Y suggests using other social influences such as: persuasion; consultation and discussion; and a form of influence known as 'professional help' to provide support to workers so they can "achieve their own goals best by directing their efforts toward the success of the enterprise." (McGregor 1960, p. 49).

Theory Y and the findings from the pilot project together suggest that interventions can be used to create conditions which assist users to satisfy their basic needs by means of participative techniques. This, in turn, will enhance their motivation to accept change and use technology – although, as McGregor (1960, p. 41) argues, it is important to remember that:

"Management cannot provide man with self-respect, or with the respect of his fellows, or with the satisfaction of needs for self-fulfilment. We can create conditions such that he is encouraged and enabled to seek such satisfactions for himself, or we can thwart him by failing to create those conditions."

### **4.5.4 Motivation Crowding Theory**

While motivation is likely to be important in many organisational change contexts, it seems to be of critical importance in the non-profit sector. People working or volunteering within NPOs typically exhibit high levels of intrinsic motivation (Benz, 2005; Ridder and McCandless, 2010; Yeung, 2004), and NPOs rely on this motivation as fundamental to their workforce's effectiveness (Leete, 2000; Frey & Jensen, 2001; Benz, 2005).

As defined in Sections 1.1.5 and 3.4 **Error! Reference source not found.**, MCT is used to study the crowding-out or undermining effect (Frey and Jegen, 2001; Reiss, 2005) caused when external events (such as rewards or other environmental forces) undermine or crowd-out intrinsic motivation (Deci and Ryan, 1985; Frey and Jegen, 2001). I have shown in Section 1.1.54 that this study meets the requirements for potential crowding-out, that is: non-profit workers have a sufficiently high intrinsic work motivation and the conditions (in the form of changes brought about by NPM) for crowding-out exist.

Since MCT considers the relationship between external interventions, intrinsic motivation and the resulting behaviour (Frey, 1994) MCT has been used as a framework to evaluate how an ICT-induced organisational change (external intervention) affects workers' intrinsic motivation and their behaviour in terms of accepting change and, thus, new ICT implementations. We can then develop and implement interventions to reduce crowding-out effects.

Frey & Jegen (2001) offer a survey of the literature of the empirical evidence for the existence of crowding-out (and crowding-in), and argue that the crowding effect is an empirically relevant phenomenon in the social sciences, despite criticisms and scepticism about relevance – often the reason for scholars not pursuing the analysis. These authors argue that the collected empirical evidence supporting crowding effects is wide-ranging, in that it has been gathered in many different countries over a number of time-periods, in a variety of economic and societal areas. Many studies have been undertaken in a variety of fields including psychology, sociology and economics. Economists, while agreeing that intrinsic motivation exists and, indeed, plays an important role in the economy and society (Frey & Jegen, 2001) do not pursue the concept because it is difficult to analyse and control (Osterloh & Frey, 2007; Frey & Jegen, 2001).

The third sector – and especially the social service delivery sub-sector – forms, in its own right, an interesting and important domain for the study of ICT-induced organisational change. The primary focus of this study is the inter-relationship between effective organisational change (the external event which could potentially crowd-out intrinsic motivation) and the maintenance and/or enhancement of the intrinsic motivation of the workforce in a third sector organisation. Key aspects of the developed framework of ideas which guide this research then include:

- The importance of ICT-induced organisational transition;
- Multiple (potentially both contradictory and equally valid) perspectives on the problem situation and on both the desired transition and the process of transition; and
- The fragile, but important, intrinsic motivation of the workforce.

Although MCT has been discussed in both organisational settings and in voluntary areas, it has not previously been used as a basis for understanding or measuring the effects of organisational change, particularly in the non-profit sector; nor have the ways in which intrinsic motivation can drive organisational change, or how organisational change can enhance (crowd-in) intrinsic motivation previously been analysed. This research project therefore provides new theoretical and practical contributions in both these areas.

#### 4.5.5 Action Research

Social psychologist Kurt Lewin first coined the phrase “action research” in his 1946 paper “Action Research and Minority Problems” (McTaggart, 1991). Lewin, who was interested in human groups and their dynamics (Checkland and Holwell, 1998a), had developed this term for use as “research that was designed with action in mind” (Helms-Mills et al. 2009, p.43) and he used this to facilitate social change. Action research has been described as “an interventionist approach to the acquisition of scientific knowledge” (Baskerville and Wood-Harper, 1996, p.237) and is designed to be cyclical in nature. Although several different models have evolved over the years, it generally consists of *planning*, *acting*, *observing* and *reflecting (evaluation)* (McTaggart, 1991; Helms-Mills et al. 2009).

According to Baskerville and Wood-Harper (1996) three characteristics of the action research method can be used to define the “ideal domain” (p. 239) for using this method:

1. The researcher is actively involved;
2. The knowledge obtained can be immediately applied; and
3. The research is a cyclical process linking theory and practice (Baskerville and Wood-Harper, 1996, p.239).

This study meets all three of those characteristics, which is why the action research method was chosen for this research as outlined below:

- The study is exploratory. It was not feasible to find a “real world” case study to analyse as an “external observer”; and an experimental design would not have allowed the emergence of unexpected outcomes from what is a poorly understood contextual matrix (in an experimental study, it would have been necessary to stipulate the contextual matrix). Thus some form of participant study in the field was called for;
- Because facilitation and enabling change were undertaken by the researcher, the intervention offered provided sufficient flexibility to explore emergent issues; and
- The intervention which took a form very similar to a conventional consultancy resulted in a closely replicable change management process, i.e. it would be feasible to replicate the study (within the normal limits inherent in field work).

Two alternative methods of linking theory and/or research and practice (see point 3 above) have also been reviewed briefly in this section to ensure the most thorough possible evaluation of potential methodological approaches. The dual cycle of action research was selected for this particular project as outlined in Section 4.1.2 and the justification for deciding against these alternative approaches is provided below.

### ***Engaged Scholarship***

Van de Ven and Johnson (2006) propose engaged scholarship as a method to close the gap between theory and practice, which they view as a knowledge transfer problem. Engaged scholarship is where “researchers and practitioners coproduce knowledge that can advance theory and practice in a given domain.” (Van de Ven and Johnson, 2006, p.803). Through collaboration practitioners are actively involved in the research process, including designing (e.g. formulating the research questions); conducting and implementing the research in a real world setting to resolve the research problem (Van de Ven and Johnson, 2006; Korte, 2009).

The engaged scholarship method consists of four interrelated steps:

1. ground the problem in the real world;
2. develop “plausible alternative theories” (Korte, 2009, p. 234) to address the problem;
3. “design and construct research to empirically evaluate the alternative theories” (Mahoney, 2008, p.1016); and
4. “apply and disseminate the research findings (Van de Ven and Johnson, 2009, p.810) to resolve the problem.

While I did have an organisational partner in this study, this partner was not actively involved in the actual research processes such as formulating the research questions and, therefore, the engaged scholarship method was considered less appropriate.

### ***Action Design Research***

Design research (or design science research as it is also known) “seeks to develop prescriptive design knowledge through building and evaluating innovative IT artifacts” (Sein et al. 2011, p. 39) for solving problems (Iivari and Venable, 2009; Gregor and Hevner, 2013). There has been much discussion about Action Research (AR) and Design Research based on their similarities and differences (see for example, Iivari and Venable, 2009). Unlike action research, design research neglects collaboration with, or intervention with, a client/organisation (Iivari and Venable, 2009).

With this in mind, Sein et al. (2011, p.37) propose Action Design Research (ADR) which “reflects the premise that IT artifacts are ensembles shaped by the organizational context during development and use” as another way to connect research and practice. The ADR method consists of four stages, each with a number of principles as outlined below (see Sein et al. 2011 for a diagram):

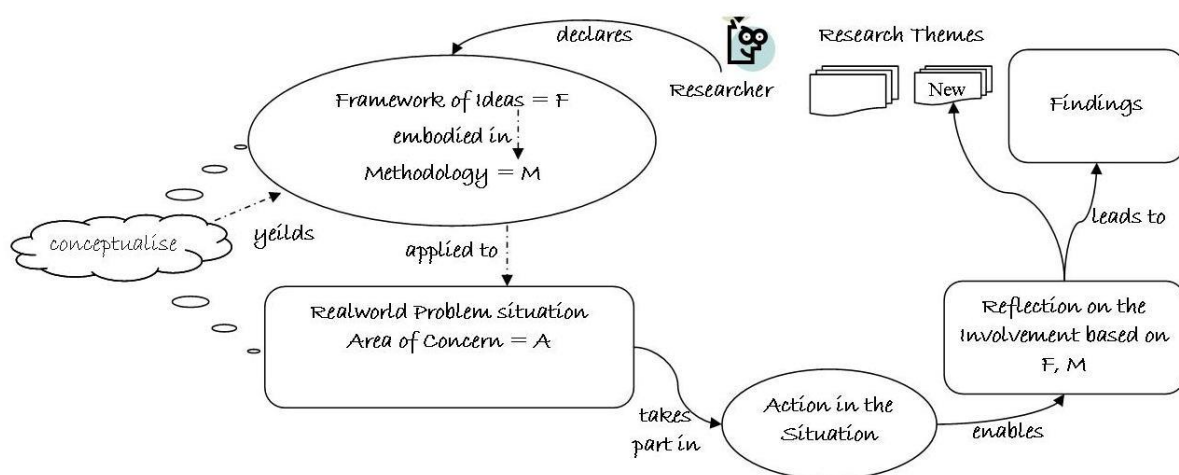
1. Problem Formulation
  - a. Principle 1: Practice-inspired research
  - b. Principle 2: Theory-ingrained artefact

2. Building, Intervention and Evaluation
  - a. Principle 3: Reciprocal shaping
  - b. Principle 4: Mutually influential roles
  - c. Principle 5: Authentic and concurrent evaluation
3. Reflection and Learning
  - a. Principle 6: Guided emergence
4. Formalisation of Learning
  - a. Principle 7: Generalised outcomes

Design research, in and of itself, was not as appropriate for this study as Action Research because of my direct involvement in the activities undertaken at UC. As Iivari and Venable (2009) state, Design Research is more a “research orientation, within which one can use different research methods (including AR)”. With this in mind I therefore selected the dual cycle of action research as the most appropriate research approach for this study as outlined below.

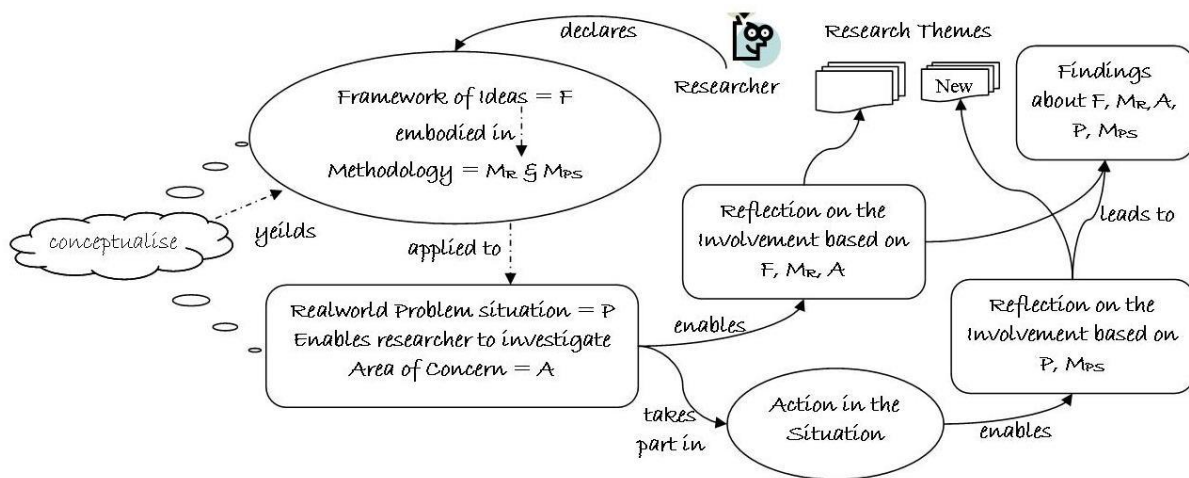
#### 4.5.6 Dual Cycle Action Research Approach

Checkland argues that action research neglects the “need for a declared-in-advance intellectual framework of ideas” (Checkland and Holwell, 1998b, p.22) and therefore developed a diagram demonstrating the activities involved in action research, later refined to ‘any research’ (West & Stansfield, 2000). Checkland’s diagram outlined the researcher’s framework of ideas (F) being used in a methodology (M) to investigate some area of concern (A) (Checkland & Holwell, 1998b). From this diagram Checkland went on to create the “Cycle of Action Research”, where lessons can be gained by concentrating on research themes. Figure 4-2 illustrates Checkland’s conceptualisation.



**Figure 4-2: Checkland’s view of Action Research (adapted and synthesised from various illustrations in Checkland 1985, Checkland & Holwell 1998b).**

Since both action and research are the dual aims of the action researcher, McKay and Marshall (2001) created a dual cycle of action research consisting of a problem solving interest cycle and a research interest cycle. The dual cycle is made up of two methods: the research method ( $M_R$ ) which is the same as Checkland's M above, and the problem solving method ( $M_{PS}$ ), which is the method employed to “guide the problem solving intervention” (McKay and Marshall, 2001, p. 53). These authors argue that this dual mode of action research makes it easier for researchers to ensure they are actually doing research, not merely consultancy work, thus improving the rigor of action research and allowing for better planning, reflection (evaluation) and monitoring of the action research process and the project (McKay and Marshall, 2001). This dual cycle of action research has been added to Figure 4-2 and was used to guide the present action research project. Figure 4-3 demonstrates the activities involved in this action research project.



**Figure 4-3: The Dual Cycle of Action Research**

In this study the elements of action research are:

- The Framework of Ideas (F), which consists of non-profit organisations and Motivation Crowding Theory: NPOs typically have a highly intrinsically motivated workforce which, if it perceives external influences (organisational change) to be controlling them, the (external influences) will tend to crowd-out their intrinsic motivation;
- The Research Methodology ( $M_R$ ), which is action research with elements of grounded theory used to structure data collection and analysis;
- The Problem Solving Methodology ( $M_{PS}$ ), which is Soft Systems Methodology: guiding the research as it is suitable for exploring people-centred problems and is an appropriate base for intervention in and study of an NPO since there is a higher than usual consultation process and staff participation in organisational change. SSM was used as the basis for exploring the whole process of interaction between the nature of organisational change and the motivation of the workforce. The participative management approach, Theory Y, was used as a guide to help manage the problem situation; and TAM was used as a guide to understanding technology acceptance. A review of the way the TAM family conceptualises motivation was undertaken and a modification to TAM is presented in Chapter 6 which was used to operationalise acceptance in this study;



- The Problem Situation (P), which is the implementation of an ICT-induced organisational change in an NPO without alienating its intrinsically motivated staff. The aim was to maintain and possibly enhance the intrinsic motivation of workers during the change process; and
- The Area of Concern (A), which is the effects and relationships between ICT acceptance, organisational change and the intrinsic motivation of a NPO's workforce.

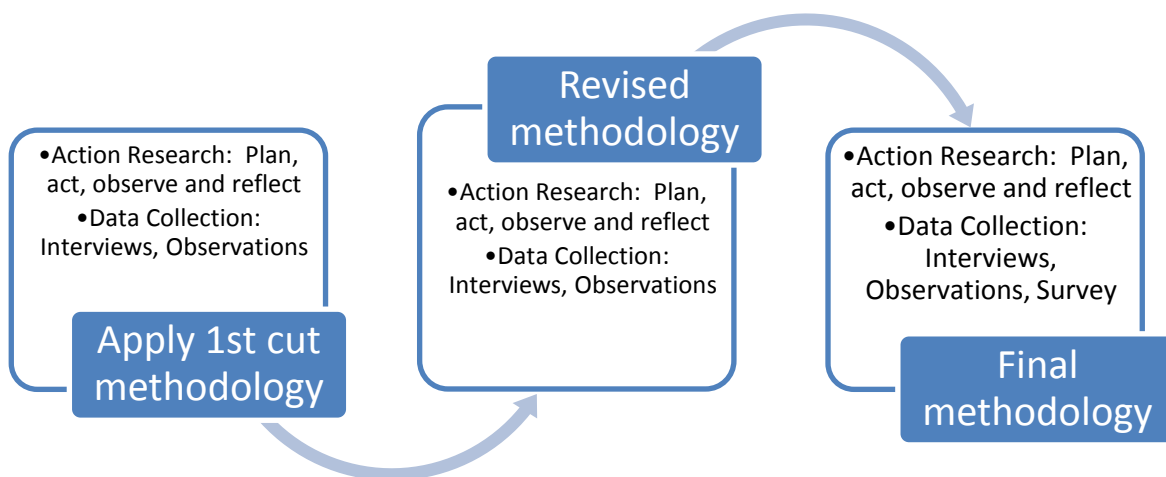
Table 4-2 summarises the activities involved in both the problem solving cycle and the research interest cycle, which are very much interlinked and, to some extent, contingent on one another as reported in McKay and Marshall (2001). Mathiassen et al. (2012, p. 349) state that the “attention to the two cycles and their interaction helps researchers produce knowledge by applying theoretical knowledge in response to practical problems at hand”.

**Table 4-2: Dual Cycle: Summary of Activities (adapted from McKay and Marshall, 2001)**

<b>Problem Solving Interest in AR</b> <b>M<sub>PS</sub></b> (problem solving method) eg: SSM <b>P</b> = Problem Situation	<b>Research Interest in AR</b> <b>M<sub>R</sub></b> (research method) eg: AR <b>A</b> = Area of Concern
Identify real world problem that provides scope for the elucidation of research themes or ideas	Identify some initial area of interest, a particular idea or objective or research question(s)
Reconnaissance/fact finding to find out more about the nature of the problem context, its owners & key stakeholders in problem solving process. Historical/cultural/ political components of relevance etc.	Reconnaissance/fact finding in relevant literature, clarifying issues, and identifying existing theoretical frameworks of relevance. A theoretic framework from which to investigate the research interest will be adopted.
ARer maybe in collaboration with participants plans a problem solving strategy...	Researcher plans & designs a research project with the express purpose of enabling him/her to find answers to research questions, themes, or objectives etc.
...and proceeds to implement a number of action steps. These steps may or may not be guided or informed by a particular problem solving approach (eg: SSM)	Action is taken, the researcher remaining cognisant of his/her particular theoretical perspective.
Actions are monitored & evaluated for their impact on perceived problem situation	Actions are monitored in terms of research interests & evaluated for the effect the intervention has had in terms of the research questions.
ARer either exits from the situation if satisfactory outcome has been reached or amends the action plan and makes additional changes to the problem context, embarking on another AR cycle.	If questions can be answered or satisfactorily resolved, or illuminated or reframed the researcher exits for the organisation. Or the ARer will amend his/her plans and designs to seek further explanations and start another AR cycle.

### ***Cycles of Action Research***

To enable me to work towards the development of an autonomously-supportive organisation change implementation strategy for an effective ICT-induced transformation it was necessary to conduct three cycles of empirical research within UC, each set of approximately 6-9 months' duration. These cycles consisted of: developing the strategy; applying it whilst embedded within the organisation; reflecting on the outcome of both the activities and their outcomes and, thus, further evolution of the strategy; and so on. Following from Carroll and Swatman (2000, p. 239) the “multiple iterations of these cycles enact a spiral towards understanding, as current knowledge and theory lay the foundations for yet another research cycle that will expand or revise our understanding.” as shown in Figure 4 – 4.



**Figure 4-4: Research Approach**

Following the dual cycle of action research, this project took a participatory approach to: ( $M_{PS}$ ) exploring and managing the problem situation (drawing on e.g. Checkland's Soft Systems Methodology and McGregor's Theory Y); and ( $M_R$ ) investigating the research interest (drawing on for example, participatory action research) paying particular attention to the social context in which the organisational change process occurs. By means of these participatory approaches the actors directly affected were encouraged to take ownership of the design and implementation, which was expected (and this expectation was specifically investigated) to result in less resistance to change, more commitment to the project and increased job satisfaction (Wagner and Piccoli, 2007). I particularly explored whether the tension between the introduction of more formalised systems and the intrinsic motivation of the workforce in NPOs (highlighted in Benz, 2005) is characteristic, or whether organisational change could lead to increased intrinsic workforce motivation.

Action Research does not prescribe how the qualitative data collected should be analysed. In this study, therefore, I have chosen to draw on the grounded theory method for data analysis.

#### **4.5.7 Grounded Theory**

Grounded theory "is a qualitative research method that seeks to develop theory that is grounded in data systematically gathered and analysed" (Urquhart et al. 2010, p. 357). The authors argue that while this theory is used (and is useful) in information systems research, it is not used fully for theory development but, rather, is used only as a coding method (Urquhart et al. 2010).

This research has made use of grounded theory to guide data collection, coding, and analysis throughout the study, rather than using it for its more common purpose of building a new theory, because Action Research alone does not offer a guide to data collection and analysis in the way that grounded theory can.

According to Corbin & Strauss, open coding is “the interpretive process by which data are broken down analytically” (Corbin & Strauss 1990 p. 12). Following this technique all data were arranged into data documents in the first instance and then fractured into segments that made sense when viewed as individual pieces of data, after which conceptual labels were applied to these data fragments. During the labelling process the researcher was continually thinking: what is this about? what is happening? what is being referenced here? The process of data analysis and refining the conceptual labels was undertaken multiple times whilst reviewing the literature and engaging other theories from outside the information systems field which, according to Urquhart et al. (2010), is one of the advantages provided by grounded theory. Chapter 5. explains this process in greater detail.

Urquhart et al. (2010, p. 365) say that “because grounded theory has an emphasis on constructs and relationships, it is relatively easy to generate propositions relating to information systems phenomena that may – or may not – be testable”. In this study the use of the coding technique from grounded theory has indeed enabled me to generate propositions for testing, using a survey instrument.

## 4.6 Data Collection

Just as in the pilot study, data collection in this doctoral study took the form of informal and semi-formal interviews with staff within the NPO experiencing the change process, at regular intervals throughout the project. Observations from being embedded within the organisation were recorded, a document analysis was undertaken and, finally, a survey was conducted. Table 4-3 below outlines the methods of data collection and analysis.

**Table 4-3: Data Collection and Analysis Method**

<b>Data Collection Method</b>	<b>Data Storage Method</b>	<b>Data Analysis Method</b>
Natural observation	Recorded on data documents	Fractured and Coded data documents. Interpretation using Grounded Theory to create common themes
Unstructured interviews	Recorded on data documents	
Semi structured Interviews	Transcribed audio recordings into data documents	
Document analysis	Notes	Comparison to observation and interview themes
Survey	Raw results	Descriptive analysis

Appendix 4 contains an indicative list of interview questions (for the semi structured interviews) covering the main themes of motivation, attitudes toward organisational change and attitudes toward ICT and its adoption, as approved by the University’s Ethics committee. Appendix 2 contains the ethics approval letter, together with the information sheet and consent form which were displayed on the Organisation’s Intranet (Limited Disclosure was approved for use by the Ethics Committee for observations only) and given to participants.

A web-based survey instrument (Appendix 7) was developed for use in the final round of action research which reflected the themes which been identified in the previous two rounds. A new technology acceptance model was created and the survey questionnaire was developed to test a set of propositions related to that model. Where possible, a combination of existing measurement tools was adapted and used from the psychology, organisational change and information systems research fields. For example, Deci and Ryan's Self Determination Theory website at Rochester University provides a number of questionnaires for researchers to use. These questionnaires are designed to measure motivation in a number of different settings and perspectives, ranging from laboratory experiments, health and sporting perspectives to school and work settings.

The final action research cycle was reduced in length when I was offered a full time position within UC. The position was responsible for implementing a new Client Management System (CMS) across the counselling and case work services within the organisation. The survey was developed while I was employed at the organisation and was based on themes from the previous rounds of action research. Being responsible for the implementation of the CMS as an employee rather than a researcher allowed me to extend the themes developed in the action research study to this implementation unhindered. The survey was tailored to the implementation of the CMS rather than being based on the action research study presented in this thesis. However, since the themes developed in the action research study were closely followed in this new project, the survey on the implementation of the CMS demonstrates that, regardless of the ICT being implemented, the themes can be applied to any ICT implementation project. The survey was made available to staff after several service areas had completed the CMS implementation. Chapter 7. gives details of the results of the survey.

## **4.7 Chapter Summary**

The research design for this study was selected as part of a natural progression of the project. As a result of the pilot project, which was conducted in a similar way to a conventional consultancy project, worker motivation during an ICT induced organisational change was a primary concern for UC. Using this concern as a basis for the research design, I studied the most appropriate methodologies and theories to resolve this issue which, in turn, led to the development of a unique research approach suited to the project specifically – and the non-profit sector more broadly.

This action research study followed a mixed-method design in which the primary approach was qualitative, consisting of participant and general observations, interviews, document analysis and, finally, a survey.

Using the dual cycle of action research, the Framework of Ideas (F) included non-profit organisations and motivation crowding theory; the research methodology ( $M_R$ ) was action research with ground theory guiding the data analysis; the problem solving methodologies ( $M_{PS}$ ) used to guide this research were soft systems methodology and Theory Y. All these were applied to the real world problem situation (P) which was the implementation of an ICT-enabled organisational change in a NPO without alienating their intrinsically motivated staff and finally the area of concern (A) was the effects and relationships between ICT acceptance, organisational change and the intrinsic motivation of the UC's workforce.

## **Chapter 5. Empirical Investigation: Action Research Phase One**

### **5.1 Introduction**

The partner organisation, Uniting Communities (UC), recognised the need to better manage their electronic documents. However, they didn't want to implement an electronic document & records management system (EDRMS) for several reasons, including the lack of funding and resources needed to undertake the project at that time. Rather, they simply wanted a structure to guide the storage and, even more importantly, the retrieval of their electronic documents across the organisation.

As outlined in 0, an action research study was undertaken in 2008 into the implementation of an electronic functional classification scheme (FCS) to help structure the storage and aid retrieval of electronic documents as a pilot project in one service area of Uniting Communities (UC) (reported in Howard and Swatman, 2009a). I was embedded within the organisational change team and took an active part in the design and implementation of the FCS within the pilot project. The study focused on the mutual interaction of the organisational change process and the motivation of the workforce. Tentative findings from the pilot project (used to generate hypotheses for the next cycle) included:

- Regardless of the level of participation offered during an organisational change event, moments of crisis (in confidence) can be expected;
- Resolving these moments of crisis using consultation, education and participation is crucial for success – as is the speed with which these crises are resolved;
- Intrinsic motivation appears to play an important role in determining organisational change success;
- Intrinsic motivation rather than extrinsic motivation may be used to drive organisational change;
- Organisational change may enhance intrinsic motivation by providing a sense of achievement and feelings of satisfaction;
- A 'motivational spill-over effect' may occur in other areas of the organisation as a result of the successful organisational change within one section of the organisation.

To protect the anonymity of participant's pseudo names have been used linked to a separate master list containing identifying information held by the researcher in the empirical chapters.

### **5.2 The Problem Situation**

Following the successful implementation of the pilot project, UC decided to implement the new FCS in stages across the entire organisation. The success of the pilot implementation had resulted in a positive overall response from participants to accept the change. The roll-out commenced in 2009 and, given the large size of UC and its diverse and physically dispersed structure, the project was scheduled to take two years to fully implement the new system across the organisation.

I went back into Uniting Communities as part of the organisational change team for a seven-week period, commencing in April 2010, to get the new action research study started. Phase one of this study enabled me to obtain an overview of how the overall implementation project had progressed since its inception in February 2009.

In the language of Action Research (outlined in Othe ‘problem situation’ to be studied in this research project was the potential for this organisational change process to crowd-out the intrinsic motivation of the non-profit workers, should they perceive the new procedural changes and change management interventions to be controlling or affecting their self-perception. My focus was on question 3 (as redefined in 0): *Can we develop, test and refine an autonomously-supportive organisational change implementation strategy to reduce the crowding effect of intrinsically motivated staff in an organisation?*

### 5.3 Planning

Although MCT has been discussed in organisational settings and the area of voluntary activities, it does not appear to have been explicitly used (or perhaps such use has not been reported) as a basis for implementing participatory organisational change, particularly in the non-profit sector. Using the framework of MCT to guide data collection and the analysis process, I evaluated (using the Motivational Continuum) how, or if, the management of this change affected worker motivation to – and acceptance of – the change and the new system.

As outlined in Chapter 3. and briefly summarised here, types of motivation on the Motivational Continuum are classified according to the type of self-regulatory behaviour, as illustrated in Table 5-1 Intrinsic, Integrated and Identified forms of regulation are referred to as autonomous motivation types (Ryan and Deci, 2000b), (as previously outlined in Chapter 3. ) and are the most relevant types of motivation for this study. This classification scheme for the type of self-regulated behaviour will be used to identify and explain the type of motivation a person may be using during the change process throughout the rest of the empirical investigation.

**Table 5-1: Types of motivation based on regulatory behaviour (Ryan and Deci, 2000b)**

Type of Motivation		Type of Regulation	Definition
Intrinsic Motivation	Autonomous Motivation	Intrinsic Regulation	“The inherent tendency to seek out novelty and challenges, to extend and exercise one’s capacities to explore, and to learn” (p. 70)
Extrinsic Motivation		Integrated Regulation	“Occurs when identified regulations are fully assimilated to the self, which means they have been evaluated and brought into congruence with one’s other values and needs.” (p. 73)
		Identified Regulation	“Identification reflects a conscious valuing of a behavioural goal or regulation, such that the action is accepted or owned as personally important.” (p.72)
	Controlled Motivation	Introjected Regulation	“Introjection involves taking in a regulation but not fully accepting it as one’s own. It is a relatively controlled form of regulation in which behaviours are performed to avoid guilt or anxiety or attain ego enhancement such as pride.” (p. 72)

Type of Motivation		Type of Regulation	Definition
		External Regulation	“Such behaviours are preformed to satisfy an external demand or reward contingency. Individuals typically experience their regulated behaviour as controlled or alienated. (p.72)
Amotivation		Non-Regulation	“the state of lacking the intention to act. When amotivated people either do not act at all or without intent – they just go through the motions. Amotivation results from not valuing an activity, not feeling competent to do it, or not expecting it to yield a desired outcome. (p. 72)

Since I was interested in finding out why users might be intrinsically motivated (via the type of regulation being displayed) to accept change and the system being implemented, I needed to isolate a set of factors which would allow me to compare the different data documents (see section 5.4). Herzberg et al. (1959) defined job-attitude factors in developing the Motivation-Hygiene theory (also known as the two-factor theory) and this was absolutely relevant to my need to understand why and how worker motivation changes. In Herzberg’s terms (Herzberg et al. 1959 p. 44), I needed to know “what happened and why what happened changed the” type of self-regulation and, thus, the motivation workers exhibited during the change process. This was achieved by using MCT and “the empirical evidence it yields in fostering healthy self-regulation” (Ryan and Deci, 2006, p. 1580).

Behaviour is “regulated by an interplay of self-generated and external sources of influence” (Bandura, 1991, p.249) and it has been proposed by Dunning (2016, p. 27) “that theorists adopt an explicit systems approach to the study of motivation” where the object of analysis is the interplay between the person (in this case the user) and environment/situation. In this study I was focussed on how users “organise their behavioural regulation” (Ryan and Deci, 2006, p. 1563) when I applied autonomously supportive interventions. For example, encouraging users to internalise the change, which gave them a sense of control over the situation, helped them to either fully evaluate the change in line with their other values and needs (integrated regulation), or to consciously value the behavioural goal or regulation which was perceived as being personally important to them (identified regulation) – as explained in Table 5-1 above.

During this phase I was specifically looking at the change management and implementation practices being used so as to identify gaps and difficulties which might have occurred in the previous rollout phases. From the organisational change literature, Boddy and Macbeth (2009, p. 299) had identified 11 practices “which were commonly recommended to those implementing change”. These included such things as: project management planning; senior management commitment; ensuring adequate resources; having a champion; creating a project team; having a detailed flexible project plan; and consulting widely with affected staff. My intention during this phase was to review the project and understand how the rollout was progressing; and then to introduce (or re-introduce) some of the commonly recommended change management practices and implementation interventions in a more autonomously supportive way in Phase Two of the action research study. Using a more autonomously supportive implementation approach would have an impact on the type of self-regulation and thus motivation of workers undertaking the change.



## 5.4 Action and Data Collection

Preliminary data collection and analysis was undertaken during this first phase of the research project to review the current status of the project from the time it began in January 2009 up to April 2010, when this phase commenced, as discussed below. This initial phase of the action research project involved me being embedded within the implementation team from the 14<sup>th</sup> April to the 27<sup>th</sup> May 2010 and included participating in an internal review event in October 2010 relevant to this project.

During the preliminary analysis I investigated which standard change management practices were – and were not – being used, as outlined below. I identified gaps and made a note to try and understand:

- why (some of) those practices which were being used were not working
- whether it would be possible to implement (some of) those practices which were not currently being used during the next phase of action research, to see whether they would have an impact on the type of worker motivation being displayed.

As Section 0 will show, this analysis suggested that the way the change was being managed – the actual process of implementing the new FCS into the organisation – lacked a coordinated approach.

I developed a set of factors (i.e. change management interventions) which allowed me to model what happened during the implementation process and how these activities might have affected workers' motivation; and this modelling process evolved during this phase of the action research study (and is described in Section 0). It became apparent that these factors had the potential to affect staff motivation positively in terms of accepting both the change itself, as well as the system being implemented.

These factors were then used in a data collection and analysis model to structure and analyse data collection during the subsequent action research phase, allowing me to formulate interventions designed to reduce the likely crowding-out effects caused by the change.

The data gathered while being embedded within the project team enabled a thorough understanding of the issues existing at that time within the implementation project; and how those issues were being managed by the project team. Attending and taking part in information sessions and business analysis interviews allowed me to observe staff behaviour in relation to the implementation project, i.e. their level of acceptance of the project; and how the project team managed that behaviour. Additional data collection consisted of a document analysis of the minutes of all project team meetings from February 2009 to the end of May 2010; and a review of organisational annual reports. I was also invited to attend an organisational excellence self-assessment workshop for the information services, records and communications units in October 2010, where a review of the project was undertaken by people from across the organisation in accordance with the Australian Business Excellence Framework (SAI Global). I participated actively in the review and also observed employee reactions to the discussions to identify staff perceptions of how well the project had been managed, implemented and accepted.

Data collection consisted predominantly of one-on-one discussions, together with observations made during a variety of implementation activities such as information and training sessions; and project team and organisational meetings. A total of 17 data documents – which are a set of transcribed records of field notes and interviews (see Locke, 2001) – were created over a seven-week period; and an additional data document was created following the internal review in October 2010. I categorised these documents according to the implementation activity being undertaken at the time, as outlined in Table 5-2.

**Table 5-2: Data documents created by category and date**

<b>Implementation project team &amp; organisational meetings</b>	<b>Implementation Information Sessions for staff</b>	<b>Business Analysis Activities</b>	<b>One-on-one discussions and/or observations</b>
14 April 2010	05 May 2010	10 May 2010	17 May 2010
27 April 2010	06 May 2010	12 May 2010	18 May 2010
28 April 2010		14 May 2010	20 May 2010
03 May 2010		20 May 2010	27 May 2010
12 May 2010			
17 May 2010			
24 May 2010			
06 October 2010			

The data collected during this phase of the action research study were then analysed to identify what data might be relevant; and the analysed material was used to guide data collection in the next phase of the action research process.

The open coding technique associated with grounded theory – “the interpretive process by which data are broken down analytically” (Corbin & Strauss 1990 p. 12) – was chosen to structure and analyse the collected data. The data were initially arranged into data documents and then fractured into segments which made sense when viewed as individual pieces of data (see, for example, Locke 2001). As a result, some data segments consisted of a single phase while others contained several sentences. After the data had been fractured into segments which made sense, conceptual labels (coding the data) were applied to these segments. During the coding process I continually asked myself: what is this about? what is happening? and what is being referenced here? (Locke 2001). These questions were used to generate the conceptual labels assigned to each data segment. Table 5-3 demonstrates the open coding process undertaken.

**Table 5-3: Example of a fractured data document being coded using the open coding process**

<b>Line No.</b>	<b>Notes</b>	<b>Coding</b>
56-57	and are processes in place encouraging participation and involvement in change and improvement projects?	Participation
57-58	With regards to the...project we are supporting leadership using the AIMC group as leaders in their area during the rollout across the organisation	Leadership Empowering
59-61	With regards to having processes in place for encouraging participation/ involvement in change activities Susan believes the organisation does she says “even though Goodwill doesn’t have [the system] yet we are very impressed with the way it is coming along	Enthusiasm Communication
61-62	we understand why it is coming and Colin has motivated staff and explained why it is being implemented”	Motivated Communication

Line No.	Notes	Coding
62-63	Hannah agreed saying the [implementation project] process was very good	Project Management
63-64	“feedback was great, we were allowed to make mistakes and weren’t judged for it,	Feedback
64-65	we had responsibility for our communication	Communication Participation
65	taking responsibility for our own opportunities to learn from our mistakes	Empowering Participation
66	and the ability to have input”.	Consultation

Once the data had been coded and fractured, a ‘memo’ was created (see Table 5-4) to capture the conceptual details (Corbin and Strauss, 1990). Memoing “helps researchers to articulate and conserve their sense-making about what is going on in the data” (Locke, 2001, p. 45) and provides “a firm base for reporting on the research and its implications” (Corbin and Strauss, 1990, p.10). From the fractured data above, the following memo was created:

**Table 5-4: Example of Memoing of the fractured data**

56-57	<b>Keywords: processes; participation; involvement in change.</b> Leadership need to ensure processes are in place for staff participation in change - this may reflect the culture of the organisation and can be used to demonstrate that the organisation values its staff.
57-58	<b>Keywords: supporting leadership.</b> Empowering staff to take responsibility. Using them as change leaders in their areas to facilitate acceptance of the change.
59-61	<b>Keywords: processes; participation; involvement in change; very impressed.</b> The extent of participation that Alex has had is just in receiving information. This small/low amount of participation has created enthusiasm for the project which should lead to acceptance.
61-62	<b>Keywords: understand; motivated; explained why.</b> With information comes understanding - with understanding comes the motivation to accept the change and get on with it. Communication plays a vital role to gaining acceptance.
62-63	<b>Keywords: process...was very good.</b> The process of implementing the FCS in the pilot project site was considered to be good because participation in the change process was allowed.
63-64	<b>Keywords: feedback; mistakes; weren't judged.</b> Feedback - open communication allows people to feel comfortable.
64-65	<b>Keywords: responsibility for our own communication.</b> Empowering them to take responsibility for their own communication within their unit during the implementation.
65	<b>Keywords: responsibility; learn from our own mistakes.</b> Again empowering users to take responsibility for their own mistakes.
66	<b>Keywords: ability to have input.</b> Consultation was appreciated.

During the research project I periodically met with both my PhD supervisors and with the principal sponsor of the project within UC, to present and discuss my findings in terms of the labels and concepts and their relationships. As Corbin and Strauss (1990, p 11) note: “opening up one’s analysis to the scrutiny of others helps guard against bias” and this approach provided me with a variety of alternative perspectives when interpreting the data.

### ***Themes Developed***

During the first analysis (which generally occurs during or directly following note-taking) 117 conceptual labels were assigned to the fractured data. According to Moghaddam (2006) it is not unusual for a researcher to have a significant number of labels at this stage because, as with grounded theory, “conceptually similar events/actions/interactions” (Corbin & Strauss 1990, p.12) have been grouped together. I therefore created 14 groups (see Table 5-5) based on the representative themes of the labels which had the potential to crowd-out or affect types of motivation. For example, labels such as ‘communication’ and ‘feedback’ both went into the ‘communication’ group, while ‘participation’ and ‘consultation’ went into the ‘implementation’ group.

**Table 5-5: Label Groups from Initial Analysis**

Personnel/Human Resource Management	Project Management
Leadership	Implementation
Communication	Best Practices
Perceptions	Resources
Organisation	Motivation
Emotion	Information Management
PeaceKeeping	Left Overs

These groups (concepts) and labels were then assembled into virtual label cards which were used as a comparison tool. During this process it became apparent that a number of labels overlapped. In order to clarify meanings relevant for this project I referred back to the main concepts discussed in the theoretical analysis and created word checklists for each concept as it related to MCT, since this was the framework chosen to structure future data collection and analysis. Based on the literature, word checklists were made for:

- (1) NPM practices; and the resulting
- (2) Organisational change (as the external interventions of MCT);
- (3) Motivation;
- (4) Emotion (as the motivation and feelings associated with it); and finally
- (5) Acceptance (as the resulting behavioural manifestation of MCT).

It should be noted that all these word checklists included the positive and negative words associated with each concept. For example, the ‘motivation’ word checklist contains terms such as: recognition, competency, achievement, anxiety, fear and alienation.

After reviewing the literature in more specific areas relating to worker motivation, organisational change management and the acceptance of ICT systems, I undertook a re-analysis and comparison exercise to identify how the data or codes related to the literature. This resulted in a dramatic reduction in the number of labels (from 117 down to 46) and concepts (from 14 down to 7).

A further analysis and comparison was carried out to ensure I was only considering areas relevant to this study and which could be used effectively as factors having the potential to crowd-out or affect the type of motivation staff might have to accept this implementation. During this re-analysis the groups and labels were further defined, resulting in re-naming several groups more appropriately and reducing the number of labels still further down to 30. Table 5-6 provides a snap shot of the final data analysis (not all labels are included) illustrating how individual labels have been assigned to each of the main concepts identified as possibly having an impact on the intrinsic motivation of staff.

**Table 5-6: Final data analysis concepts and some labels**

<b>Labels</b>	<b>Concepts</b>	<b>Description</b>
New Public Management	Non-Profit Sector	General specific motivational factors
Consultation		
Staff Satisfaction		
Structure	Organisation	Other organisation-wide factors that may affect motivation to accept the change/system
Leadership		
Systems		
Access	Technology	Existing attitudes towards ICT and the department that may affect motivation to accept the change/system
Political		
Ease of Use		
Time	Project Management	Process that affect the motivation to accept change/system
Quality		
Human Resources		
Quality	Communication	Although a project management process because of its importance in influencing motivation this process has been given its own label
Relevance		
Participation		
Perceived Control	Motivation	Measuring the affect of the concepts above on motivation is important for this study
Competence		
Anxiety		
Acceptance	Resulting Behaviour	Behaviour towards the system being implemented
Resistance		
Persistence		

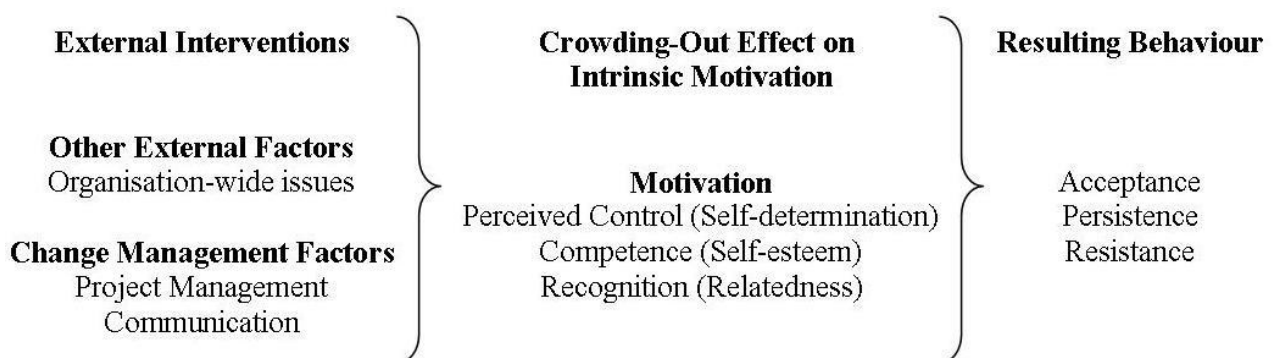
During this phase of the action research study I found that the concepts relating to the non-profit sector, the organisation, technology, project management and communication may all have an effect (either directly or indirectly) on the motivation of workers to accept the new system. A summary of these findings and their implications is presented in the next section, together with a data collection and analysis model (based on the MCT framework) which was used to evaluate how the management of an ICT-induced change affects a worker's autonomous (including intrinsic) motivation and the resulting behaviour in terms of accepting that change.

## 5.5 Observations and Reflection

As stated in 0, question 3 of this research study was re-phrased so as to focus on the problem situation: *Can we develop, test and refine an autonomously-supportive organisational change implementation strategy to reduce the crowding effect of intrinsically motivated staff in an organisation?* In order to achieve this goal, the first step required me to gain an understanding of how the project had progressed since it began in February 2009, after which I needed to discover what factors might have crowded-out the workers' intrinsic motivation during the organisational change process.

As outlined in Section 4.4.2 the MCT framework was used to evaluate how the introduction of the Functional Classification Scheme (FCS) to manage electronic document storage and retrieval processes as an organisational change event (external intervention) affects workers' intrinsic motivation and their behaviour in terms of accepting change and, thus, the new processes being implemented. This was achieved by using the Motivational Continuum to determine the type of motivation a worker is displaying at any given time throughout the study. From this I could then develop and implement interventions to reduce the crowding-out effects, based on an expanded understanding of motivation so as to increase acceptance and, thus, implementation success. To achieve this aim, I had to analyse each external change management intervention being used to determine how self-determination, self-esteem and/or relatedness might be affected (Frey 1994).

The data collected during phase one of the action research study were analysed several times to identify factors with the potential to crowd-out or affect the type of motivation staff members had to accept the change and the system being implemented at UC. Those factors included other organisation-wide issues, existing technology and the project management and communication processes used during the implementation. Using the MCT framework model (to demonstrate how NPM crowds-out motivation), as presented in Section 2.4, these factors are illustrated in Figure 5-1.



**Figure 5-1: Factors which may affect motivation using the MCT framework**

### ***Other External Factors***

The data analysis revealed that external factors may affect the type of motivation leading to workers' acceptance of change. For example, an internal staff survey (conducted in 2012) revealed that worker satisfaction had fallen to an all-time low, even though consultation within the organisation had increased (UC Annual Reports 2010-2013). It was clearly important to investigate why worker satisfaction had declined, assuming the consultation was perceived as being genuine by the staff. Investigation into these areas was important because:

- Worker satisfaction is one indicator of motivation. Exploring why satisfaction had declined might well suggest additional variables/influences – or cast doubt on the initial hypothesis!
- Consultation is believed to be important in facilitating acceptance of change and maintaining motivation if and only if it is perceived to be genuine (rather than, for example, being just an opportunity for staff to “vent” which management may then ignore).

Other organisation-wide issues which may affect the motivation of staff to accept the change and system being implemented were categorised into two main areas: leadership; and organisation-wide ICT systems and their ease of use.

It was found that the organisation as a whole and in various parts was undergoing other changes which might have an impact on the motivation of some staff to accept further change. Examples of such changes occurring within various parts of the organisation included ICT implementation projects in specific units (e.g. the aged care unit) and unit restructuring (e.g. combining Disability and Mental Health units). It was anticipated that the way these other changes were undertaken would have an effect on staff willingness to accept additional change and/or a new system.

Leadership is an important element in any organisation and, especially, within a change project. Leadership style is particularly important for staff motivation. For example, participatory style vs. perceived control / authoritarian style plays a role in influencing facilitation/acceptance of the change and system being implemented. The document analysis suggested that one area of the organisation had set up its own implementation committee to help drive the project in that unit. This proactive approach by the unit manager (who could be seen as a change leader) indicated that acceptance of the change had occurred – at the very least by that manager. The type of motivation used by the manager to set up his own unit implementation committee could be demonstrated as being governed by either:

- Introjected Regulation: that is, the motivation was not his own but the activity was undertaken to avoid guilt or anxiety; or to boost his esteem (Ryan and Deci, 2000a, 2000b); or
- Identified Regulation: where the manager is demonstrating that he values the change because it is aligned with his other values and needs (Ryan and Deci, 2000a, 2000b).

This committee would be used to encourage acceptance of the change within that unit.

In phase two of the action research study, further data collection might involve:

- Investigating the leadership role at differing levels (e.g. top management support, project management, change leaders) in facilitating change within various units so as to compare how various styles of leadership (if evident) affect the type of motivation for staff acceptance; and
- Investigating the role/influence of change leaders in each unit and comparing success or failure with and without change leaders.

Organisation-wide ICT systems and their ease of use had an effect on the implementation project. UC has a total of four different network drives, as well as an Intranet, where people can save and find documents. Preliminary findings indicated that most staff were confused about the purpose and use of these network drives which led to a number of problems, including: documents saved multiple times in multiple areas; problems with the currency of documents; and back-up/access problems. The issue of documents saved in multiple locations, in particular, led to implementation problems within the project itself. Users had to be educated about how to utilise the various drives prior to implementing the new system, which added an extra level of complexity to the original implementation project's design. Staff were frustrated about the existence of multiple drives which led to the conclusion that the organisation's current ICT network set up was not easy to use. One staff member, in particular, stated that she didn't care which drive was used – she just wanted one, single, network drive!

Perceptions of the ICT department as a whole became very clear during the organisational excellence review, where one member of the group said that 'generally, members of staff have a poor perspective of ICT because they don't believe they are being listened to'. If the consensus within the organisation was that the ICT department lacked empathy or was perceived as controlling, this would clearly have an effect on the type of motivation for staff to accept the system.

In the next action research phase further investigation was required to narrow down the impact of these issues on the project, in particular investigating ease of use in terms of the multiple network drives; and the Intranet and its impact on the motivation of staff to accept the change and system being implemented.

### ***Change Management Factors***

The way in which any organisational change project is managed plays an important role in its success or failure. In this study I found that the following project management and communication processes (outlined in Table 5-6) had the potential to affect the type of worker motivation.



**Table 5-6: Change management factors which may affect motivation to accept change**

Key Factors	Labels	Observations	Impact on Workers
<p>Project Management</p> <p>Processes which may affect motivation towards accepting the change/ system</p>	Scope	The original project plan was to implement the FCS on the main network drive (G:Drive) dedicated to storing all organisational documents in each organisational unit. However it was found that not all areas use this drive; some use the S:Drive because of access issues across various locations. The project team were considering doing both Drives and other network drives which were not accounted for in the original project plan.	Scope creep has been instigated by the way the network drives have been used in each area. This has an effect on the project team; and end users, e.g. training end users about the purpose and use of the various network drives. Expanding the project to included other network drives impacts the motivation of the project team and staff in general to want to continue with the change and implement the system in more areas than was originally intended. Rather than displaying an autonomous type of motivation to accept the change and system, both the project team and end users may be motivated by external regulation (refer to Section 5.3) instead which has consequences for learning and performance (Ryan and Deci, 2000a).
	Time	The original project plan followed a staged approach to implementation. The project has moved to a rolling schedule which seems haphazard because the project team are going back and forth to many different units. The organisation as whole cannot see where they are up to because nothing has been documented (in terms of updating the project plan). Other implications have included tasks being delayed or overlooked which are critical to the project's success.	Not following a project plan has several motivational implications: (1) how is motivation to accept change maintained in areas waiting to receive the new system; (2) How is project momentum maintained in areas (and within the project team) without implementation milestones? One manager commented: "we were supposed to be done two years ago" then she said "maybe it wasn't two years ago but it feels like it because it has taken forever to get around to us".
	Quality	Since the project plan has not been maintained it is unclear what the project is being monitored against. The project team did recognise the need to have some type of quality control measures in place such as fortnightly audit checks and periodic reviews. However, no formalised process was used. The reviews were not coordinated and scheduled so monitoring of the project was done in an ad-hoc way.	Rarely documented system changes have affected the motivation of staff to accept/continue with the change in various units. This caused confusion within the project team and across units where the system was being implemented. Responsibility for the fortnightly checks was given to senior administrative staff, however with no formalised process in place the checks were not being completed. The most beneficial type of motivation to persist with change is autonomous motivation (see Section 3.4), which the users may well have had in the first instance to accept the change. However, with the confusion occurring this motivation seems to have changed, in some cases to amotivation – whereby users do not act at all (evidenced by not doing the checks) or act without intent.
	Human Resources	The project was under-resourced and the people assigned were not experienced in carrying out an organisational change project. For example a project officer was assigned	Motivation of the project team and other staff need to be considered independently. Assigned responsibilities, competence to carry out change tasks and so on affect

Key Factors	Labels	Observations	Impact on Workers
		to administratively support the project whilst the consulting company was managing the project. The consulting company's contract expired and the project officer took over the responsibilities for things like completing the business analysis; and conducting information & training sessions.	motivation of the project staff to implement the change/system and this in turn affects the end user's acceptance. The implementation has to be re-done in several areas due to design faults being mentioned which impacts on both the end users and the project team.
	Communication	Although this is a project management process it has been recognised as a key factor because of its importance in influencing motivation - see below.	
Communication	Quality & Relevance	<p>I attended two information sessions and noticed that there was a lot of background information around the project but nothing really of interest to staff around what was going to happen and how it was going to affect the end users.</p> <p>It didn't appear that there were any project status reports in any format (e.g. to the Executive; or updates on the Intranet). Whilst the project had a dedicated area on the Intranet the information on it was inaccurate and out of date. Updating this information was not seen as a priority for the project team.</p>	<p>At the end of one information session several end users commented that they didn't know what was going on and what it was all about – they found the whole thing confusing.</p> <p>Another end user tried to follow the instructions on the Intranet on how to use the new system “she followed the bouncing ball but got stumped because it talked about using One-2-One (online thesaurus) but this doesn't exist.”</p> <p>Timing of information, its accuracy, its presentation and if it comes from a trustworthy source all affect motivation to some degree. Information is seen as a form of control which relates directly to motivation.</p> <p>The information needs to be relevant to staff; e.g. how it affects their own work. This reduces anxiety/uncertainty about the change/system, giving a sense of control (see Quality above) and encouraging them to use a more integrated or identified type of self-regulation resulting in a more autonomous type of motivation to accept change.</p>
	Participation	Participation by staff at all levels in the project has been encouraged. Participation in regards to tactical decision making (i.e. when, where and how to implement change) has been undertaken in every area of the organisation.	This gives a perception of control which influences a more integrated or identified type of self-regulation being used to accept the system/change being implemented.

I found that the implementation project team had revised the original project plan timeline because of the changing nature of the organisation's business. For example, a large tendering process (consisting of several rounds) was undertaken during the implementation project and involved several different units of the organisation. During tendering, unit managers were generally taken 'off-line' so their concentration on the tender would not be disturbed by other business concerns. This removal of managers from their normal day-to-day routine, however, led to delays in the implementation project in these areas, which may itself have negatively affected the project workers' motivation to facilitate the change and user motivation to accept it.

During this phase of the study the implications of modifying the project plan seemed to have led to a number of items being delayed or overlooked – including:

- policy and procedures to support the implementation project were not finalised;
- no coordinated and ongoing (updated) communication plan;
- momentum seemed to have stalled several times from the perspective of the project team itself ('too busy doing their real jobs') and that of staff within the organisation;
- the online interactive thesaurus (a commercial off the shelf software product titled One-2-One ) was not available;
- decisions (changes) to the system were not being accurately recorded or not being recorded at all; and
- some of the implementation processes themselves were not done correctly e.g. the business analysis was not conducted correctly as a result of inexperienced project team personnel which led to problems being exposed later in the project (e.g. during training), requiring further analysis following the implementation.

The consequences of not maintaining a project plan needed further investigation in the next phase. Although preliminary evidence suggested the changes to the project plan had an impact on the type of motivation of both the project team (in terms of progressing the change project) and end users (in terms of accepting the change) further investigation was required to see if and how these changes had affected staff motivation.

Another area of concern which affected staff motivation to continue with the change was the existence of other concurrent changes which occurred as the system was rolled out across the organisation. These changes to the FCS were not adequately recorded by the project team who, for example, failed to document the reason why the changes had occurred. These changes had to be implemented within areas which had already received and implemented the new system, so that the combination of multiple changes affected the motivation of staff to continue (persist) with the change. As shown in Table 5-6, autonomous motivation is the most beneficial form of motivation for persisting with change, but it appears that staff changed from the autonomous motivation with which they started the entire change process to a more externally-regulated – or even non-regulated (amotivation) type – as these issues continued to arise during the implementation.

The initial data collection suggested that human resources was another issue needing further investigation in terms of competence, control and leadership (see Table 5-5). The project teams' motivation was just as important as the users' motivation, yet it appeared at times that the project team were themselves lacking motivation (amotivation) to implement the changes. As stated in Section 5.3, amotivated people either do not act or just 'go through the motions' and, according to Ryan and Deci (2000b, p. 72), this can result from "not feeling competent to do it" (i.e. the activity).

Communication is particularly important in any change management project and can be used as an intervention technique/tool to reduce the crowding-out effect if used effectively. Communication, in terms of providing information, encouraging participation and consultation is an important tool for reducing uncertainty during organisational change and promotes openness to change (Allen et al. 2007; Meier et al. 2013). Information is also a source of control and perceptions of control can influence motivation. Table 5-5 highlights the importance of the quality and relevance of the information supplied in terms of motivating users. Communicating effectively during the change process encourages end-users to utilise a more identified regulation (see Section 5.3) by giving them the opportunity to value the system/change as being personally important to them which is classified as an autonomous type of motivation.

The data collected during phase one made it clear the project team did not have a communication plan. Communication in terms of updating the organisation and users on issues such as progress was not evident. At one project team meeting we were told not to "underestimate the level of ignorance of staff; including many senior staff levels". We were also told that one "senior staff member is making claims about how difficult [the system] is to use" even though he hadn't been trained in how to use the system and was not using it himself and that "this is impacting on the culture". As a result of lack of communication by the project team to those areas who were waiting for the implementation (which, according to Ali et al. 2016, is a cause of resistance), it appeared staff were using gossip as the main source of project information. In other areas (where implementation was complete), by contrast, it was reported that communication about the project had been well received, with one staff member reporting "we understand why it is coming and Colin has motivated staff and explained why it is being implemented". Communication in terms of quality and relevance and its impact on the motivation of staff would clearly need further investigation in the next phase of the action research.

Participation has been included in the communication group because it is a communicative process, as is consultation – which is also included in this section. Findings from phase one of the action research study indicated that the project team had consulted widely with people across the organisation prior to and during the implementation of the new system. Managers and their senior administrative staff, in particular, had been included in the tactical decision-making process (i.e. when, where and how to implement the change) of the project in their work areas. Allowing managers and senior administrative staff to participate in planning had encouraged more autonomous staff motivation, as employees accepted the system/change and recognised it as being personally important within their work area.

It was reported at the organisational excellence review that people's needs were taken into account during the system implementation by means of consultation and that the "ability to have input" was appreciated by one manager in particular. At times, however, it appeared as though genuine consultation was lacking, with one member reporting that "...it felt like a waste of time being consulted about something and not being listened to". The perception of genuine participation and consultation by staff and the way in which this affected their motivation was investigated (and will be discussed) in the next cycle of action research.

## 5.6 Discussion

It was extremely difficult for me to gain an understanding of which areas (business units) had completed the implementation and what tasks were left to do in other areas, because nothing had been documented in a centralised or formalised manner to provide an update on the overall progress of the project. The project team met weekly and minutes were taken but, to obtain an overview of the entire project, I had to review the minutes of all the project team meetings and interview the project team members.

This project was more than simply the implementation of an electronic FCS – the project also required the incorporation of wider organisational changes, such as policy changes. Although the project had commenced in January 2009, the supporting work was still incomplete when I commenced this phase in April 2010: for example, the development of an organisation-wide policy (and related procedures) for electronic records management was still lacking. A review of the data collected in phase one of this study showed that the project was under-resourced and that project staff did not initially have the necessary skills to undertake such a substantial and organisation-wide change project.

Standard project management approaches which had been partially implemented to support the project included the following:

- A project team was established and regular project meetings were held, but the task lists arising from these meetings (for follow-up actions) were neglected over time and were not updated nor discussed at the team meetings. Although minutes of the project team meetings were kept, they were a brief summary of what had occurred and did not include a list of outstanding actions to be undertaken. This resulted in tasks not being completed, such as the failure to develop a supporting policy and procedures for electronic records management;
- A phased project plan was created at the start of the project, but this was not maintained over time during the project; and the phased roll-out was eventually dropped: an *ad hoc* approach seemed to be taken to the implementation of the new system. Project team members were going back and forth into various services areas implementing the project piece-meal, leading to less autonomous motivation on the part of both the project team and the end users in relation to the implementation and acceptance of the change; and

- Inadequate systems to monitor the change: a series of audits had been introduced to ensure that each area was, in fact, continuing to implement the changes after the project team had completed training staff. However, audits were not scheduled regularly and were, quite often, not completed leading to less autonomous motivation to persist with the change.

It is important to note at this stage that the issue was not that traditional project management practices don't work in non-profit organisations (NPOs) but, rather, there appeared to be a lack of professionalism in applying the project management practices appropriately as these related to the more intrinsically motivated staff within UC.

As outlined in Chapter 2. the implementation of New Public Management (NPM) practices to the government sector and outsourcing social services has shifted governmental accountability to NPOs. As a result, NPOs have had to become more institutionalised, professionalised and bureaucratic which is causing widespread changes. While not all business processes from the private or public sector are suitable for NPOs, project management practices tailored to this sector are suitable, though at times during the action research phases these appeared to be difficult to implement, as management holds a weaker authority bond over non-profit workers (see Chapter 2. for more detail). While NPOs do lag behind in the adoption of ICT as outlined in Chapter 2. because of a lack of resources in terms of both funding and skills, they are different to other organisations because of the participatory, inclusive, and accessible processes they use and it is these processes which are an important motivating factor for non-profit workers. It is these processes which will continue to be used in this action research study

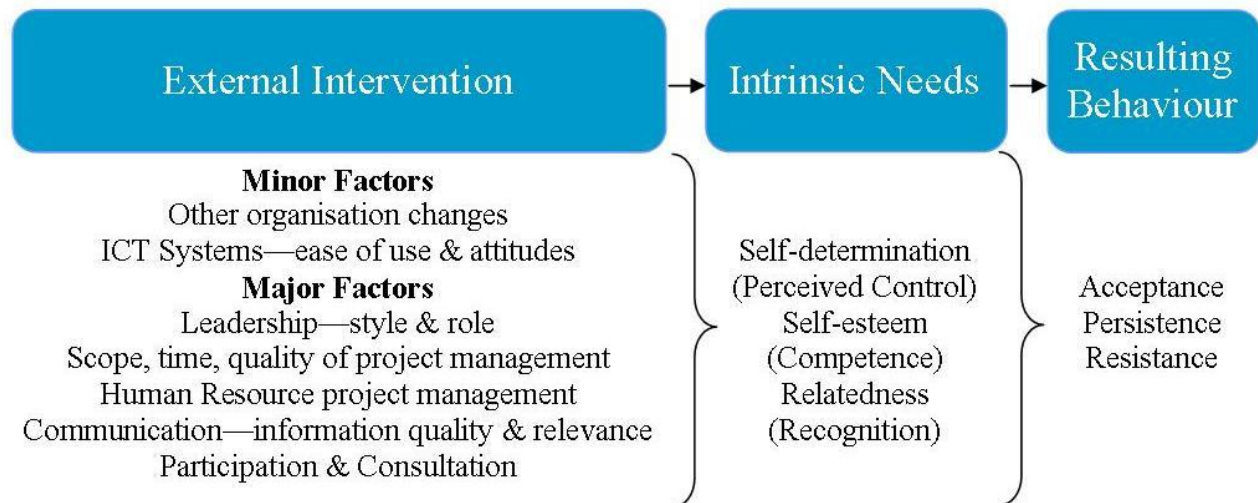
Section 0 identified a number of key factors with the potential to affect staff motivation during the change process, which required further investigation in the next phase of action research. The minor key factors possibly affecting the motivation of staff included:

- Other, concurrent changes within the organisation; and
- Organisation-wide ICT systems, their ease of use and attitudes to ICT and the department in general.

The key factors which appeared to play a major role in affecting staff motivation to accept the change were:

- Leadership – style and role;
- Project Management processes such as;
  - Scope, Time, Quality – and how these affect staff motivation to persist with the change,
  - Human Resources – played a role in terms of staff competence, control and leadership,
- Communication, which included;
  - Information – access to information and its perceived quality and relevance; and
  - Participation and Consultation – how genuine is it perceived to be?

All these factors were used as the basis for data collection in phase two of the action research study. In order to analyse these data effectively using the MCT framework, it proved necessary to analyse each factor individually in terms of: how it affected (or did not affect) staff self-determination (perceived control), self-esteem (competency) and relatedness (recognition) – the intrinsic needs which drive motivation. The Change Factors and Motivation Crowding model presented in Figure 5.2 was used to structure and analyse data collection in the next phase of action research.



**Figure 5-2: Change factors and motivation crowding model**

Using this model in the next phase of action research (Phase 2) I would be able to further isolate those factors which could crowd-out workers' intrinsic motivation to accept the change and system being implemented and, thus, to formulate interventions which might reduce the likely crowding-out effects.

Since each worker's motivation to accept change plays an important role in implementing any change program, including an ICT- induced change, understanding how an individual's motivation is likely to be affected during any change project is crucial to its success.

Acceptance of change is important generally within organisations – and motivation to accept an ICT system being implemented is specifically important within the IS field. By defining the types of motivation underlying acceptance more fully it may be possible, for example, to review and create a new technology acceptance model more inclusive of the types of motivation underlying acceptance. This has important implications for all ICT implementation projects, not just for projects within the non-profit sector, although it is particularly relevant for workers in the public service, education and medical sectors where employee motivation is also a critical factor.

## 5.7 Chapter Summary

In summarising this chapter, I have outlined and presented findings from phase one of an action research study. An overview of the pilot project to implement an electronic FCS was presented in Section 5.1 with the focus of the study being on the mutual interaction of the organisational change process and the motivation of the workforce. Following an action research approach the problem situation (the potential for the change process to crowd-out motivation) and the plan to address it was presented. The framework of MCT was used to guide data collection and analysis, and the Motivational Continuum (Table 5-1) was used to evaluate how, or if, the management of this change event affected worker motivation.

The data collection and analysis process was described using an open coding technique associated with grounded theory, where data was fractured and coded, and themes were developed. Drawing on the MCT framework I identified a number of factors (see Figure5-1) from the data which had the potential to crowd-out or affect staff motivation to accept the change and system being implemented. Based on the findings presented in this chapter, I created the Change Factors and Motivation Crowding Model to guide and structure data collection during the next phase of action research.

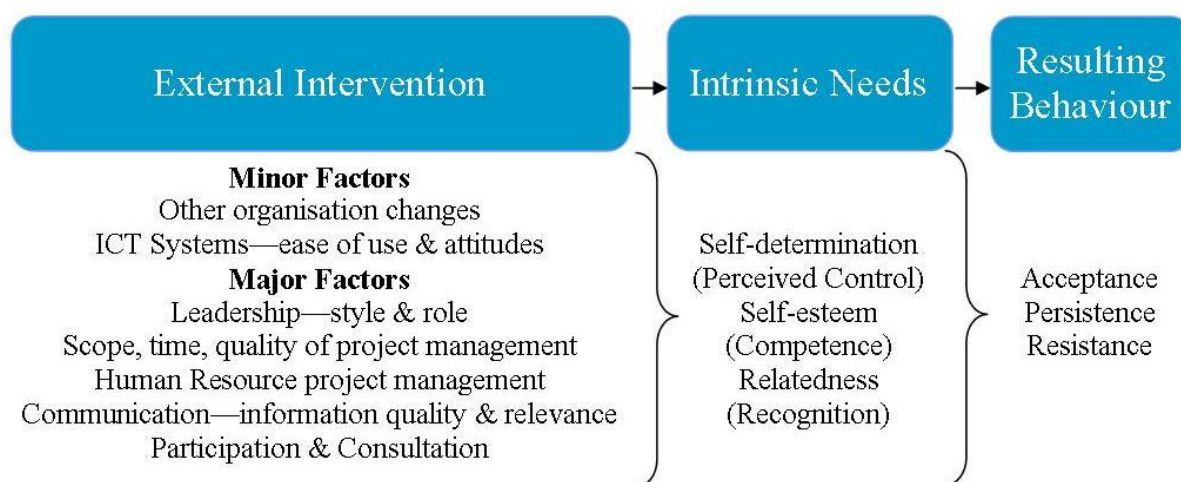


## Chapter 6. Empirical Investigation – Action Research Phase Two

### 6.1 Introduction

Phase One of the action research study presented in Chapter 5. provides an overview of how the implementation of the electronic functional classification scheme (FCS) to better manage the storage and retrieval of electronic documents had progressed since it began in February 2009. The data gathered while being embedded within the project team enabled me to gain an understanding of current issues with the implementation project.

The data were analysed to identify specifically what was of relevance, and what factors had the potential to crowd-out the intrinsic motivation of workers during the management of the change process. The identification of these factors is displayed in the Change Factors and Motivation Crowding Model (CFMC) in Figure 6-1 and was used to guide data collection and analysis in this second phase of the research study.



**Figure 6-1: Change factors and motivation crowding model**

A summary of the findings from Chapter 5 is presented in Table 6-1 grouped by the External Intervention factors listed in Figure 6-1. As no interventions were applied in the first phase of the action study the organisation continued with the implementation of the FCS in a number of service areas during my absence between phase one and phase two of the action research study.

Phase Two of the study ran from the 19<sup>th</sup> January till the 3<sup>rd</sup> July 2011. During this time, I was embedded within the implementation project team for a period of eight weeks. The overall goal for this phase of the project was to re-instate some of the most frequently recommended change management and implementation practices outlined in Section 6.3. These standard project management practices needed to be applied in an autonomously supportive way, as opposed to a controlling way, in order to reduce the likely crowding-out effects. Sections 6.3 and 6.5 of this chapter are structured so that each of the factors listed as External Interventions in Figure 6-1 is a sub-heading.

Following the action research phases discussed in Chapter 5. , this chapter includes:

- A summary of the problem situation discovered in the first phase of the study;
- A general plan outlining the proposed interventions and how they might affect the problem situation in this second phase of the study;
- The actions taken to implement those interventions and their effect on the problem situation; and
- A reflection of how this action research cycle progressed.

Included in the Discussion section of this chapter is the development of a new model incorporating motivation with technology acceptance, which is used to guide the third phase of the action research study (reported in Chapter 7).

## 6.2 Problem Situation

During Phase One I was looking specifically at change management and implementation practices being used in the implementation project. Findings from Phase One of the action research study indicated that the project to implement an electronic FCS was:

- managed using (loosely) some established project management practices; and
- seemed to lack a coordinated approach (among other things) which appeared to be adversely affecting the potential success of the project.

The way in which a change process is managed may also cause a crowding-out effect if workers perceive the new procedural changes and change management interventions as being controlling or affecting their self-perception in some way. The lack of communication seemed to be one of the biggest issues, for example some staff didn't understand why the implementation project was happening at all! The findings from Phase One are summarised very briefly in Table 6-1 (refer to Chapter 5 for more detail) and are grouped by the External Intervention factors outlined in Figure 6-1. As outlined in Chapter 5, the motivational continuum is used in terms of classifying motives (as predictors of performance) based on the type of self-regulatory behaviour a user displays.

**Table 6-1 Summary of Findings from Phase One**

<b>Factors Affecting Motivation &amp; Acceptance</b>	<b>Description</b>	<b>Impact</b>
Other Organisational Changes	Includes such things as other information systems implementation projects; unit restructuring.	The way in which these changes are managed and if they were successfully implemented will affect staff's willingness to accept more change.
ICT Systems ease of use and attitudes	Multiple network drives within the organisation is confusing for staff.	Having multiple network drives has resulted in documents being saved multiple times in multiple locations; difficulty in locating organisational documents; currency of documents and back-up/access problems. Staff are frustrated with this and do not find this set-up easy to use resulting in a possible crowding-out effect.
	Poor perception of the ICT Department across the organisation.	Staff feel they are not listened to. ICT is perceived as being controlling. Resulting in end users being driven by external regulation instead of accepting the change.

<b>Factors Affecting Motivation &amp; Acceptance</b>	<b>Description</b>	<b>Impact</b>
Leadership	Participatory style vs. Perceived control/authoritarian style.	Influences the facilitation/acceptance of the change/system.
Project Management Scope	Expanded scope because of the problems caused by having various network drives.	Educating users on the various network drives (purpose & use). Impacts the type of self-regulation being used by the project team to guide their behaviour to implement the change and by workers to continue (persist) with the change.
Project Management Time	Changed from staged approached to rolling implementation with no set deadlines for each unit.	Tasks are delayed and/or overlooked. Without milestones (indicating achievements) it is difficult to maintain motivation for the project team and those waiting for the project to reach them, resulting in a possible crowding-out effect.
Project Management Quality	No formalised process for quality checks of the project.	Rarely documented system changes affect the type of self-regulation being used by workers to accept/persist with the change. Responsibility for quality checks have been assigned without any formalised processes.
Project Management Human Resources	Under resourced project. Those assigned have little to no experience or training in carrying out this type of project.	Assigned responsibilities and competence to carry out project tasks affect the type of motivation of the project team to implement the project and the end users to accept the change.
Communication Quality & Relevance	Outdated and/or inaccurate project information being displayed. The relevance of some of the Information sessions was lost on staff.	Staff didn't understand why the project was happening. Information needs to be relevant to reduce anxiety/uncertainty about the change. Relevant information gives users a sense of control encouraging a more integrated or identified type of self-regulation resulting in a more autonomous type of motivation being used to accept the change. Outdated and/or inaccurate information causes confusion for users. Gossip used as a source of information.
Communication Participation	Some staff have had input into tactical decision making i.e.: when, where, and how.	This gives the perception of control which reduces the likely crowding-out effect.

A specific problem identified by this analysis was that the original project plan and timeline had not been maintained because of the changing nature of the business. This had the following effect:

- Implementation was delayed in some areas, which adversely affected the project workers' ability to facilitate the change; and the users' likelihood of accepting it. Instead of using an integrated or identified type of self-regulation to internalise and accept the change, both the project team and end users tended to use external regulation instead;
- Implementation tasks were being delayed or overlooked by the project team, for example:
  - Policy & procedures supporting the implementation were not completed;
  - There was no formalised communication plan to update users and the rest of the organisation about project progress. Communication – or, as in this case, lack of communication – is a form of control;
  - Momentum had stalled several times (on the part of both the project team and the business units). This suggested that motivation to undertake and persist with the project had changed to amotivation, where both the project team and business units simply do not act at all;

- Online version of the FCS (One-2-One) was not available, making it considerably more difficult for even enthusiastic users to utilise the FCS effectively;
- System changes were rarely documented;
- Implementation processes were not done correctly (e.g. inadequate business analysis) leading to implementation problems and causing a likely crowding-out effect).

Other problems included the ongoing system changes which affected the areas already using the system. This, in turn, affected the motivation of staff to persist (continue) with the change. Even the project team at times lacked motivation to continue!

Despite the problems listed above some traditional project management practices used to implement change had been retained or partially implemented during the course of the project, including:

- The establishment of a project team which held regular project team meetings;
- Consulting with affected staff when implementation occurred in specific areas;
- The introduction of systems to monitor the change, not all of which were carried out. For example, a series of audits was proposed. Since no formalised processes existed to support auditing, however, staff did not perform the audits.

As stated in Chapter 5. , the issue is not that traditional project management practices don't work in non-profit organisations (NPOs), but rather that there appears to be a lack of professionalism in applying these practices appropriately, with a consequent adverse effect on their previously intrinsically motivated staff – which is the focus of this study. While not all business processes from the private or public sector are suitable for NPOs, project management practices tailored to this sector are suitable. At times during this phase of the action research, however, these appeared to be difficult to implement as management holds a weaker authority bond over non-profit workers (refer to Chapter 2. for more details). NPOs differ from other organisations because of the participatory, inclusive and accessible processes they use, which are an important motivating factor for non-profit workers. It is these processes which will continue to be the focus of this phase of the action research study.

Based on the problems identified in the first phase of the action research study and a number of traditional project management practices, I developed a plan for the next phase of action research (outlined in Section 6.3), to address question 3 of this research: *Can we develop, test and refine an autonomously supportive organisational change implementation strategy to reduce the crowding-out effect of intrinsically motivated staff in an organisation.*

### **6.3 Planned Interventions**

The CFMC (Figure 6-1) has been used as a guide to structure and analyse data collection in this phase of the action research study. The minor factors are:

- Other changes within the organisation;
- ICT systems, their ease of use; and staff attitudes to ICT.

The major factors are:

- Leadership – style and role;
- Project Management Processes such as scope, time, quality;
- Human Resource project management – in terms of staff competence, and leadership style;
- Communication - which includes access to information and its perceived quality and relevance; and participation and consultation, as well as whether this is perceived as genuine.

Using the motivational continuum first presented in Chapter 3. and the types of motivation based on self-regulatory behaviour outlined in Table 5-1, this chapter discusses the ways in which the project team and end user motivation were affected by these factors. For example, encouraging users gives them a sense of control over the situation which helps them to internalise the event and use a more autonomous type of self-regulation.

Observation during this phase of the research project showed that a number of common practices used to implement change were not being used, such as keeping the project plan and timeline updated. In this phase of the action research project, I attempted to introduce and/or re-introduce a number of common implementation and change management practices (see below) and evaluated what, if any, impact this had on the type of acceptance motivation of the workers and the project team during the change process. During this phase I also reviewed participative management theories, such as Theory Y, which are effective in improving worker motivation (Deci and Ryan, 1985).

In developing the plan I was mindful that the proposed interventions needed to be autonomously supportive. Gagne and Deci (2005) suggested the following autonomously supportive interventions which facilitates integrated or identified internalisation:

- Explaining the importance of undertaking the change;
- Providing a meaningful rationale for undertaking the change in the way proposed and using the new system. This could be akin to TAM's perceived usefulness;
- Acknowledging the feelings and perspectives of staff undergoing the change; and
- Being respectful and concerned about end users, particularly those finding it difficult to accept the change and the system being implemented.

I was also mindful that although action research is an interventionist approach to facilitating social change, the interventions themselves must not prejudice the success of the underlying project but can be used to generate hypotheses. It was hoped that the interventions, which took a form very similar to that of conventional consultancy, would result in a replicable change management process, i.e. it would be feasible to replicate the study (within the normal limits inherent in field work).

The overall goal of this phase of the project was to re-instate some of the change management and implementation practices that Boddy and Macbeth (2000) report are “commonly recommended” (p.299) when implementing change (as outlined in Section 5.3). These authors further suggest that the following four project management practices increase the chances of success for any change management project:

- Goals – “ensuring people understand and agree with goals” (p. 302);
- Resources – “make realistic resource commitments” (p. 302);
- Structures – “creating structures to manage the change” (p. 299). These include clearly establishing roles and responsibilities; and “documentary or electronic systems to record information” (p. 302) about decisions and agreements;
- Controls – need to be in place to measure the progress of the change and “should be sensitive to the context of focus only on critical issues” (p. 303).

The proposed interventions included: resurrecting the project plan; developing a process for documenting system changes; and supporting and educating the project team in how to use various change management techniques such as acknowledging the perspectives and the feelings of end users. Other interventions focused on communication such as: creating a communication plan; and updating the communication processes to ensure end users were provided with a meaningful rationale for the change and understood the importance of the change and the system being implemented. The interventions which were actually implemented during this phase and the ways in which they were autonomously supportive to reduce crowding-out are summarised in Table 6-2 below, grouped by the External Intervention factors outlined in Figure 6-1.

**Table 6-2: Interventions**

<b>Major Factor affecting motivation &amp; acceptance</b>	<b>Intervention Task</b>	<b>How is it Autonomously Supportive to promote internalisation</b>
Leadership Support Participatory Style Communication	Ensure all Leaders are aware of the communication flow and discuss with their staff. Supplying items for discussion at team meetings.	Importance of change Acknowledges perspectives & feelings
Time/Quality/Scope Project Management	Project Plan was re-introduced. It included: tasks; estimated time to complete tasks; start date of tasks; dependencies recorded etc. using MS Project. Review of the project plan occurred at the weekly project meetings.	Importance of change Meaningful rationale
Human Resources Project Management	The re-introduction of the Project Plan was also designed to ensure the project team knew their role and responsibilities as tasks were distributed amongst them in the project schedule. Coaching the project team in change and project management techniques.	Importance of change Acknowledges perspectives & feelings Meaningful rationale
Quality Project Management	Process of checking (audit) the FCS in each area was created along with templates to be used by the project team and feedback for end users.	Importance of change Acknowledges perspectives & feelings
Quality/Communication Project Management	Work recommenced on creating the policy and procedures to support the change.	Importance of change Meaningful rationale
Quality/Communication Project Management	All system changes were beginning to be documented helping to keep users updated on changes.	Importance of change Acknowledges perspectives & feelings Being respectful and concerned.
Communication Quality/Relevance	Information Sessions – review and make consistent the message given and ensure there is time for questions/answers at the conclusion of each session.	Importance of change Meaningful rationale Acknowledges perspectives & feelings

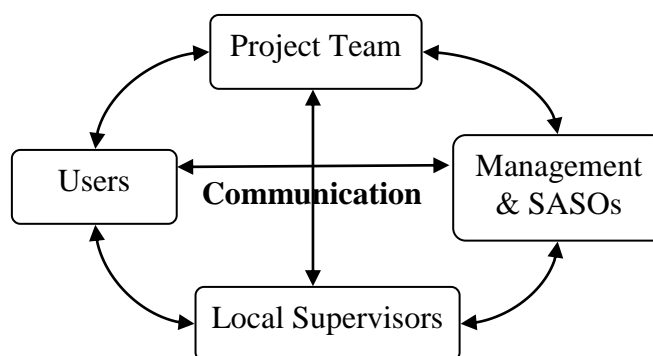
Major Factor affecting motivation & acceptance	Intervention Task	How is it Autonomously Supportive to promote internalisation
Communication Quality/Relevance	Training Sessions – review and make relevant the training sessions. Create a suite of 4 packages according to level of training required.	Importance of change Meaningful rationale
Communication Participation	Training feedback sheet was introduced.	Acknowledges perspectives & feelings
Communication Quality/Relevance	Review and update the project information on the Intranet to keep all staff informed. Schedule regular review and updates to ensure information is relevant and up-to-date.	Importance of change Meaningful rationale
ICT Systems – Ease of Use	Online software version (One-2-One) of the FCS was made available.	Importance of Change Perceived ease of use

These proposed interventions support successful project management practices because the reintroduction of the project plan ensures that goals, structures and controls are in place; documenting system changes is a structural process of managing the change; support and education ensures commitment of resources and, finally, increasing the quality of communication supports agreement and understanding of goals and ensures people understand the structures in place for the change management project.

I provided an outline of the actions which would be undertaken in this phase of the study to the Project Sponsor prior to being embedded within the project team. The outline (below) closely follows the major factors identified as External Interventions in Figure 6-1. This outline included the following information:

#### Leadership Support:

- Provide supervisors with participatory tools to encourage implementation in their areas such as a support pack containing various items including;
  - local coaching template,
  - items for discussion at team meetings,
  - a communication flow chart. E.g.:



The leadership support provided would encourage a more participatory style of leadership by recommending the leaders themselves used the proposed interventions in an autonomously supportive way.

**Time/Quality Project Management:**

- Re-create the project plan and start using it as a reminder for what tasks needed to be completed. For example, completing the policy and procedures designed to support the implementation demonstrates the importance of the change throughout the organisation. Use the project plan to monitor and report on the progress of the project and for communication updates;
- Document, coordinate and share the entire Quality Checks process to all involved. Provide a support pack and training for processes and timeframes for the senior administrative group (known as AIMC);
- Document all system changes. Document (to the extent possible from existing information) system changes which have occurred. In particular, an overall summary sheet of changes made to the FCS needed to be created.

**Human Resource Project Management:**

- Define roles and responsibilities within the project team itself and within the service areas where the FCS is being implemented;
- Increase the competency of current project staff by providing (and evaluating) mini-coaching sessions focusing on basic change and project management techniques specifically targeting motivation to reduce the anxiety of end users;
- Provide project management document templates in the mini-coaching sessions;
  - It is likely that future projects will be under-resourced (personnel). The creation of mini-coaching sessions based on change/project management tools and techniques could be used across the organisation to improve project competency levels.

**Communication Project Management:**

- Review and make consistent the Information Sessions. Have one PowerPoint presentation with speaker notes (the only part of the presentation tailored to individual service areas for relevance, because the message about why the change is happening and its importance must be consistent throughout the organisation);
- Create and review a consistent suite of training packages based on set criteria, (e.g. new user induction; refresher training; etc.). Again slides stay the same – speaker notes are tailored to individual service areas for relevancy. Users could register for additional training sessions as required and scheduled;
- Regular review and update of project information on the Intranet and in the organisational monthly newsletter needed to be scheduled and followed up so the organisation as a whole can be kept updated on project progress;
- The implementation of a communication plan was required.



Applying these interventions in an autonomously supportive way creates the opportunity for both the project team and end users to use a more integrated or identified type of self-regulation, resulting in a more autonomous type of motivation to both implement (project team members) and accept (end users) the system being introduced. This is achieved by creating conditions to help the project team leader and senior administrative staff members satisfy their needs by giving them perceived control over certain project processes (self-determination); boosting their competence (self-esteem) to lead the change and use the system and by providing recognition (relatedness) for the role they play in implementing the project. Similarly, creating conditions to help satisfy users' needs is achieved by providing them with up-to-date relevant information (perceived control – self-determination); boosting their competence in using the system (self-esteem); and in terms of recognition by providing feedback sheets (relatedness).

## 6.4 Action and Data Collection

During Phase Two of the action research study I was embedded within the project team for a period of eight weeks, from the 19<sup>th</sup> January till the 9<sup>th</sup> March 2011. Following this period, a series of one-on-one semi structured interviews were conducted with seven volunteer participants. During this section of the project I was beginning to implement the interventions outlined in Section 6.3. I was particularly interested in monitoring the impact of the interventions to see if this had any effect on the motivation of the project staff to continue with the project and the end users to acceptance.

Data collection mainly consisted of one-on-one discussions and observations made during various implementation activities such as information and training sessions and project meetings. A total of 21 data documents were created while I was embedded within the organisation. These documents were categorised according to the implementation activity being undertaken by me at the time as outlined in Table 6-3.

**Table 6-3: Data documents created by category and date**

<b>Implementation Project Team Meetings</b>	<b>Information &amp; Training Sessions for Staff</b>	<b>Business Analysis Activities</b>	<b>One-on-one Discussions and/or Observations</b>
07 February 2011	02 March 2011	14 February 2011	19 January 2011
08 February 2011	09 March 2011	16 February 2011	25 January 2011
14 February 2011	09a March 2011	28 February 2011	25a January 2011
21 February 2011			28 January 2011
28 February 2011			15 February 2011
			15a February 2011
			16 February 2011
			22 February 2011
			23 February 2011
			28 February 2011

The data collected were analysed using the same open coding technique associated with grounded theory as outlined in Chapter 5. The data were arranged into data documents in the first instance and then fractured into segments which made sense when viewed as individual pieces of data, after which conceptual labels were applied to these data fragments. During the labelling process I was continually thinking: what is this about? what is happening? what is being referenced here? The process of data analysis and refining the conceptual labels was undertaken multiple times whilst reviewing the literature and engaging other theories from outside the information systems field. By continuing to use the coding technique from grounded theory it is expected this will enable me to generate propositions for testing, using a survey instrument in the next phase of action research.

The concepts and labels presented in Chapter 5. match directly with factors affecting motivation and acceptance outlined in Section 6.2 see Table 6-4 for example:

**Table 6-4: Example of Labels and Concepts**

Labels	Concepts	Description
Time	Project Management	Process that affects the motivation to accept change/system
Quality		
Human Resources		
Quality	Communication	Although a project management process, because of its importance in influencing motivation this process has been given its own label
Relevance		
Participation		
Acceptance	Resulting Behaviour	Behaviour towards the system being implemented
Resistance		
Persistence		

## Interviews

After I had withdrawn from this action research phase of the project, 6 of 27 one-on-one semi-structured interviews with various staff were conducted from the 23<sup>rd</sup> March till the 18<sup>th</sup> April 2011. The interviews explored the following topics:

- Background information on the staff member being interviewed;
- Attitudes towards change and this particular change project;
- Motivation of the worker; and
- Attitudes to technology and its acceptance.

A targeted interview list of 27 interviewees was created for approval by the Project Sponsor. Only those areas which had participated in the project were targeted and only managers and senior administrative staff were invited to participate in the interviews. The interviews were semi-structured and some questions were changed depending on the level of the employee within the organisation structure.

An e-mail was sent to all employees on the list inviting them to take part in the research project. Attachments to the e-mail included the Participant Information Sheet and the Consent Form approved by the University of Tasmania Human Research Ethics Committee (see Appendix 3). It was stressed that participation was entirely voluntary and the consent form would need to be completed prior to the interview being conducted. Of the six who participated: two were from the Administrative group; one was from the Executive; and the remaining three were mid-level managers.

I have classed the interviews as ‘semi-structured’, however in practice my aim was to put the interviewee at ease and to simulate an informal conversation. My intention was to draw out the participants and allow them to make any points which seemed relevant in relation to the implementation of the FCS and, to a lesser extent, overall organisational change within the organisation. These were only semi-structured interviews, because I did have a checklist of questions and issues I wanted to explore with the interviewees.

It was decided that different types of information were required from different members of the targeted interview list. Some of the interview questions included specific questions pertaining to this project and others were more about exploring staff motivation. The interview questions can be found in Appendix 4, while some questions are listed in Table 6-5 with their related underlying topics.

**Table 6-5: Example of Interview Questions and Underlying Topic**

<b>Interview Questions</b>	<b>Topic</b>
Tell me about the process you have gone through during the implementation.	Attitude towards change
Why do you think the organisation is implementing this system?	Attitude towards change
Do you find your work challenging?	Self Esteem
Do you/would you like a challenge in your work?	Self Esteem
Do you find that your work gives you satisfaction? In what way?	Satisfaction with work
Can you tell me what part of your job gives you the greatest satisfaction?	Satisfaction with work – what need it is fulfilling
Do you have input in determining how you do your job?	Choice, freedom from control
Do you enjoy using computers or do you see them as a necessary part of your job?	Attitude towards technology

A transcript of the interviews was made and the data were fractured and coded using the open coding technique described above.

The next section outlines the actions taken to implement the interventions and whether they seemed to be working to resolve the problem situation; and what impact (if any) these interventions had on the motivation of both the project team and the end users. A reflection of how the action research cycle progressed is also included.

## **6.5 Observations and Reflection – Major Factors**

This section outlines the observations categorised by using the Major Factors of each External Intervention as outlined in the CFMC (refer to Figure 6-1 and Table 6-2) as sub-headings and evaluates how effective the interventions may have been at:

- (1) being perceived as being autonomously supportive; and
- (2) promoting internalisation of the change and system being implemented; which
- (3) would lead to increased persistence and/or acceptance of the change.

The remainder of Section 6 may seem somewhat repetitious, as I have individually reported on each intervention and provided evidence of how it was autonomously supportive (following the guidelines suggested by Gagne and Deci, (2005) as outlined in Section 6.3) together with the result it had on the type of self-regulation being demonstrated by the workers.

### 6.5.1 Leadership Support

Leadership style plays a significant role in supporting any change project as discussed in Chapter 3. , where it was argued that McGregor's Theory Y was one of the most successful styles used in organisational change studies. Although it was outside the scope of this study to try to change any UC leadership style, I did create interventions which would encourage a more participative style of management through communication.

The proposed intervention for this major factor was to provide supervisors with participatory tools to encourage the acceptance of the change. The pack included a communication flow chart and items for discussion (about the project) at team meetings to encourage supervisors to communicate the importance of the change with their staff; and to acknowledge perspectives and feelings through discussion of the project at their regular team meetings.

The Project Officer and I attended several staff meetings in service areas where the main focus was the project. Prior to the staff meeting the Manager or Supervisor responsible was given an outline of the types of issues surrounding the project which might be brought up for discussion. It was left up to the Manager to decide whether to bring up any of the suggested items for discussion, or how they might bring these topics up during the meeting. Giving the Manager the choice of how to use these tools demonstrated the leadership style of the Manager or Supervisor as well as the type of motivation they might have themselves with regard to accepting the change.

During these meetings I took notes of my observations and created data documents at the end of each day. Below is a sample of the fractured data, which has been coded, taken from one such meeting;

Line No.	Notes	Coding
5-7	He said that staff affected by the change should know where and what was happening so when asked they could explain it to others.	Leadership People
18-19	...is struggling with how to go about distributing the work...	Ease of Use
19-20	Bill will come up with a timeline and give out responsibilities for who will do what task.	Leadership Project Management
20-21	Bill was quite firm with the girls...	Leadership Project Management
26-27	The manager is keen to get into this ASAP he sets a timeframe...	Leadership Project Management
27-29	He wants to have another meeting next week for all staff so he can demonstrate how to...	Information Participation

Once the data had been coded and fractured, a memo was written to capture the conceptual details (see Corbin and Strauss, 1990). From the fractured data above the following memo was created:

5-7	<b>Keywords: staff affected...should know.</b> Bill is demonstrating how he would have handled it. By communicating more with staff affected and providing more information to the rest of the organisation about what staff would be affected. Again this may be as a result of different leadership styles and how people are actually managed in the organisation.
18-19	<b>Keywords: struggling...how to go about.</b> This group is having trouble with the implementation process; perhaps an ease of use problem?
19-20	<b>Keywords: timeline; give out responsibilities.</b> This is great leadership in delegating responsibilities to his staff for implementing the project in their area. Good HR project management in this area.
20-21	<b>Keywords: quite firm.</b> Again demonstrating style of leadership he is firm with his staff in giving directions and what is needed of them for this project to be implemented.
26-27	<b>Keywords: keen; timeframe.</b> The manager is again demonstrating his style of leadership. His enthusiasm to get this project completed means he has set timeframes, delegated responsibilities and in essence is managing the implementation within his own area. This is essential I think to getting the project implemented. Top management support and a champion to run with it is needed in each work area.
27-29	<b>Keywords: another meeting; demonstrate.</b> The manager is all about making sure his staff are informed about the project and that they know what to do to implement it.

It is clear from the evidence presented above that this Manager is demonstrating an integrated or identified type of regulation to guide his behaviour and thus is using an autonomous type of motivation with regard to accepting the change himself. He is using a participatory style of management to provide staff with an autonomously supportive environment during the change process. He is also demonstrating that we have provided conditions for him to satisfy his needs for self-determination and self-esteem (competence) in the project. Several weeks later I asked this Manager how the plan was going for the implementation in his area and he reported that it was generally on track and that most staff seemed to be accepting the change. There was now a standing item on their weekly team meeting agenda to discuss the project and any issues being experienced.

Feedback received from one staff member, during an interview, relating to leadership of the project in their department is displayed below, illustrating the importance of leadership.

Line No.	Notes	Coding
82-83	I think management in this department has been highly supportive of it umm and have gone with it really well	Leadership Project Management
83-85	so from an administrative perspective and from a management perspective it has been highly supported...and I think the combination has made it easier for it to be successful	Leadership Project Management
90-93	People had varied reactions to it and I think having a close connection with the management here and talking those incidents through and how best to respond to them has been really very very helpful	Resistance Consultation
177-178	I think what it has come down to is really good management umm from this department	Acceptance Leadership

It can be concluded from the evidence above that leadership does play a significant role in this change project. Those leaders who have a more participatory style of management seem to support and encourage the implementation process in their area by demonstrating the importance of change and acknowledging feelings and perspectives of end users. This, in turn, promotes internalisation of the change and allows both supervisors and staff to use a more autonomous type of regulation (motivation), such as identified regulation, whereby “action is accepted or owned as personally important” (Ryan and Deci, 2000, p. 72) to accept the change process.

### **6.5.2 Project Management – Scope; Time and Quality**

Scope creep is a considerable problem which affects both a project’s budget and its timeframe: this in turn affects the success of the project. This section outlines the issues surrounding the expanded scope of the project; the expanded timeframe for implementing the new system; and the quality processes in place.

Since the project plan had not been maintained by the implementation team after the consulting company had completed their contract, the project had been progressing in an *ad hoc* manner. The implementation had moved from a staged approach (that is department by department one at a time) to a rolling schedule (multiple departments being implemented simultaneously) which was unsuccessful for a number of reasons including lack of project resources (typically found in many NPOs); and tasks being overlooked and/or taking longer to complete. This resulted in considerable delays to the project and confusion for staff who were expecting to have the system implemented in their area at a certain time. The proposed intervention for this major factor was to recreate the project plan, using MS Project; and to document and coordinate the quality audit process.

The Project Sponsor realised the importance of having a project plan and had asked me to re-create one, as my first action item whilst being embedded with the project team, to ensure that goals, structures and controls were in place – which has been shown to be a beneficial project management practice (as outlined in Section 6.3). The Project Sponsor knew that recreating the project plan was likely to cause problems with the project team and indicated his concerns to me by stating that this might be seen by the project team as a “way of indirectly controlling and monitoring their work”.

The purpose and outcome of creating the project plan was designed at a practical level to:

- stop scope creep and ensure realistic timeframes with milestones were documented and communicated;
- ensure the project team had full understanding of tasks to be completed and to agree on goals;
- assign responsibility for undertaking tasks (ownership);
- be used as basis for updating the communication of project progress; and
- measure the progress of change via the project plan control mechanism.

The plan was also designed to be autonomously supportive and to promote internalisation for the project team by stressing the importance of the change and giving a meaningful rationale. However, it became evident during the process of collecting the information required that the Project Officer's motivation, in particular, was being crowded-out as she perceived the task of creating the project plan as being controlling (as described below) as had been predicted by the Project Sponsor.

The task of creating the Project Plan (Gantt chart) was made very difficult for a number of reasons including the difficulty of obtaining sufficient information from the project team to complete the task. For example, the Project Officer didn't know (or wouldn't say) what tasks needed to be completed and could not estimate how long other tasks would take, despite having been responsible for the implementation tasks since the consulting company left. It was reasonable to expect the Project Officer would know what implementation tasks had to be undertaken, which indicated a type of resistance by the Project Officer to having the project plan re-created.

The Project Officer had previously demonstrated the use of a more autonomous type of regulation to implement the change, yet during the process of creating the project plan it became clear to me and to the Project Sponsor that her internal regulation had changed (crowded-out) to being non-regulated; and she demonstrated amotivation in completing this task:

“the state of lacking the intention to act. When amotivated people either do not act at all or without intent – they just go through the motions. Amotivation results from not valuing an activity, not feeling competent to do it, or not expecting it to yield a desired outcome.” (Deci and Ryan, 2000b, p.72).

Two data collection samples are presented below: 1) outlining the difficulties faced trying to create the Project Plan and 2) frustration expressed by Service Managers at the amount of time the project was taking. They show fractured data from observation notes and the Memos that were made. (Note: FN = Field Note; Date; Line Numbers and the activity undertaken at the time. O = Observation; BA = Business Analysis; IN = Interview. For example, FN19Jan11BA).

1) Creating the Project Plan and perceived control (impacts on Self Determination and Self Esteem).

Observation Notes	Memo
<b>FN19Jan11:14-17O.</b> Timothy had a quick flick through and saw my hand written notes. I pointed out that I needed more in-depth information for example the actual tasks that need to be performed and a rough time period so 1) we know what needs doing and 2) we can allocate the time to it.	I explained to Timothy that I needed more information so I can complete the Gantt chart including specific tasks and rough timeframes.
<b>FN19Jan11:31-334O.</b> My focus was on gathering information to complete the project plan; so I constantly referred to it and showed it to her; rather than focussing on how long it took her to do an activity or what tasks she did etc.	A consultative style of communication was used. I was asking Penelope for her expertise on parts of the plan since she is the one that has had the most to do with all parts of the project.
<b>FN19Jan11:35-37O.</b> Timothy said it may appear to others 'out there' (he gestured towards the work area) that I am bringing you in and using MS Project to indirectly control and monitor their work.	This is a perceived control issue here which is likely to impact on motivation (Self-Determination). As a leader Timothy has demonstrated he is aware of this issue and has brought it to my attention. How to deal with this perception by staff is another issue altogether.

2) Frustration expressed by Managers at the amount of time the implementation project has taken.

Observation Notes	Memo
<b>FN 16Feb11:33-34 BA:</b> “Bill said he was sick of the amount of time this was taking to implement and just wanted to get it over and done with.”	This demonstrates the frustrations of managers at the local level with regards to implementing this project. This reflects poorly on the project team (mainly). Not having a set timeframe for implementation or project plan is contributing to this problem.
<b>FN 07Apr11:183-184 IN</b> I know the system roll out umm the timeframes have had to change for various reasons and different circumstances	Staff are aware there have been changes to the timeframe of implementing this project. In this particular area they are still waiting for system implementation.
<b>FN 07Apr11:184-185 IN</b> whether other areas are right or they are taking longer and so forth but our start date got missed	Although staff are aware there is a delay – they are not entirely sure why the project has been delayed. This demonstrates poor communication surrounding the project and its delays.

Since the project plan had not been maintained it was unclear what the project was being monitored against. The project team did recognise the need to have some type of quality control measures in place, such as audit checks and periodic reviews to ensure the system was continuing to be used and used correctly. However, no formalised process or schedule was created to conduct the reviews so the senior administrative staff (SASO) who were tasked with completing the quality checks (audits) were confused about what the project team wanted and how often they should be conducting these audits, as demonstrated below.

Observation Notes	Memo
<b>FN9aMar11:8ITS.</b> Penelope then discusses the system checks that the SASOs are supposed to be doing.	This is very important in terms of quality control for the project - this allows them and us to see if it is being implemented correctly and also gives the SASOs a sense of ownership re: the implementation within their area. Perceived control over the process.
<b>FN9aMar11:9-10ITS.</b> Penelope and Martha were arguing about how the checks were supposed to be done once per fortnight by the SASOs.	Arguing a point with someone re: the project is terrible communication. If the process for carrying out the checks was written up and the SASOs had formal training in how to carry them out then this wouldn't be happening. Having no quality measures (clearly documented) in place poor project management practice.



Observation Notes	Memo
<b>FN9aMar11:23-24ITS.</b> Verity and others propose that the audits be carried out quarterly. Penelope reminded them that she does quarterly and six monthly audits already.	A great forum for consultation - however because the process of conducting the quality audits is not known by the SASOs they are proposing that the audits be conducted less frequently. The Quality checks process needs to be documented and shared with all involved so they are aware of the actual processes and timeframes.
<b>FN9aMar11:24-25ITS.</b> Someone said that Penelope needs to tell them what document to use for the audits	

The proposed intervention to improve the quality management of the project was to document, coordinate and share the quality audit process to all relevant staff. This was achieved quite quickly and feedback from one interview (FN7Apr11IN) is presented below.

124-125	the auditing processes are helpful.
125-126	people around me at times are not just in this department but in other departments feel that it is a laborious task
126-127	I find it a very helpful task not only for the broader...but also for our department who are constantly reviewing what our system - how it's going in

The last comment above shows that this approach allowed the senior administrative staff to use a more autonomous type of regulation such as Identified regulation (“conscious valuing of a behavioural goal or regulation, such that the action is accepted or owned as personally important” Ryan and Deci, 2000b, p. 72) to accept the new processes. It gave them perceived control (self-determination) over this part of the process and boosted their competency (self-esteem) to carry out this task.

Having well-documented processes in place to help staff manage various aspects of the change goes a long way towards increasing staff acceptance of the implementation project. This intervention was designed to be autonomously supportive by communicating the importance of the change with the senior administrative staff, acknowledging their feelings and perspectives during meetings; and by documenting the process and providing them with the necessary support to provide a meaningful rationale for undertaking the task as an important part of the project.

### 6.5.3 Project Management – Human Resources

It is widely accepted that NPOs lack funding and skills when implementing a new system (see Section 2.2) and this project was no different in that it was under-resourced in terms of project workers to implement the project. It was discovered in Phase One that the Project Officer had originally been given the job of providing administrative support for the project when a consultant was managing and implementing it. However, her role had changed from one of providing administrative support for the project to being the only person “on-the-ground” in terms of implementing the project when the consultant left. Her main responsibilities included: conducting the business analysis and ensuring the system fitted each area; undertaking information and training sessions; documenting all project meetings; undertaking quality audit checks; and updating the FCS as required.

No formalised training was given to the Project Officer to undertake these tasks other than observing the consultant and, because non-profit workers are generally more satisfied in their work which leads to a greater work effort, the Project Officer undertook the new role enthusiastically. Staff who are not trained or have no knowledge in any project or change management processes have an enormous impact on the success of the project and while this is not a technical project, there was still a requirement for a basic technological understanding (which was lacking) to implement the project.

It was also discovered in this cycle of action research that some project staff responsibilities were not clearly defined, which not only affected the implementation project adversely but also had an impact on the motivation of the project staff to facilitate the change. Below are segments of data and memos displaying these issues.

Observation Notes	Memo
<b>FN19Jan11:25-26O.</b> Timothy started defending Penelope, saying I must remember that Penelope comes from an administrative background	Timothy is realising and letting me know that Penelope is not qualified or trained in carrying out projects - like this organisational change project. Her competency lies in administration not electronic records management or change management. Assigning someone this important role who is not up to doing the task or being trained to do it is poor HR project management.
<b>FN16Feb11:2-4O.</b> Penelope said she has never really had anyone say why One-2-One was needed. She was just told that she would be responsible for keeping it updated which she finds a bit of a pain to do.	Penelope has been told that it is her responsibility for updating the software, even though she has been given no information as to its role within the implementation project and has not received any training in the functions of the software. This is poor project management in terms of HR (competence to do job) and communication (why the software is needed and training to use it).
<b>FN22Feb11:6-7O.</b> Avery did admit that Penelope was not aware of the full or even partial capabilities that One-2-One has.	Even though the consultant had said that the project officer was aware of the interactive thesaurus he then goes on to say that she wasn't made aware of the other capabilities which would certainly make her job easier. No wonder she doesn't want to use it when she doesn't even understand its capabilities.
<b>FN29Mar11:188-190IN.</b> this is no reflection on Penelope I think Penelope has done a fantastic job considering she had no training at all umm, no training what so ever in how to do this.	It was noticed by Colin that the project officer appointed to take over and do the project had no experience and had received no training in how to do this project what-so-ever. This is poor management of the resources for the project.

During the re-development of the project plan, roles and responsibilities were clearly defined for project staff; department staff (when implementation was occurring); and the senior administrative staff in terms of completing the quality checks. Defining the roles and responsibilities gave staff a sense of ownership and control which was perceived as being autonomously supportive – this in turn promoted internalisation of the change resulting in an integrated or identified type of self-regulation being used to demonstrate increased persistence to both implement and accept the change.

The Project Officer (although initially resistant) as a result of her determination and motivation was instrumental in re-developing the project plan and during the process was coached about the relevance of a project plan and how to create it using MS-Project. The Project Officer then took over the responsibility of updating the project plan as required. Similarly, the importance and capabilities of the software used to maintain and display the FCS (One-2-One) was explained and demonstrated to the Project Officer to provide her with a meaningful rationale for its importance to the project. The software had not been updated for six months, but once I had acknowledged her feelings and perspectives regarding the software and completed the coaching sessions she began updating and using it because she now understood its relevance to the project and her role. Her competency increased, meaning we provided the opportunity for her to satisfy her needs for self-esteem and self-determination.

#### 6.5.4 Communication – Quality and Relevance

Timing of information, its accuracy, its presentation and whether it emanates from a trustworthy source all affect motivation to some degree. Information is seen as a form of control which relates directly to motivation. The information needs to be relevant to staff,( i.e. how it directly affects their own work) which reduces anxiety/uncertainty about the change process.

In cycle one of the study it was discovered the information available to all staff on the Intranet was outdated and inaccurate. It was observed that the information provided at Information Sessions had very little relevance to staff who sometimes walked away feeling more confused than before. It was also evident there were no project status reports outlining where the system had been implemented; what stage of implementation they had reached; and what areas remained to be implemented. A data collection sample demonstrating some of the issues raised is shown below - it shows fractured data and the memos created.

Observation Notes	Memo
<b>FN2Mar11:14-16ITS.</b> Penelope did not explain why the system is being implemented in this information session. I did this today after the presentation because someone asked.	This presentation was supposed to be an information session for introducing the system yet the main element - why it was coming was not mentioned. Perhaps this is why people could not see the relevance of it to their work and didn't participate more fully in the session.
<b>FN29Mar11183-184IN.</b> and so of course rumours go around about what the system is what kind of new program is this.	Because the timing of the information sessions was out and also because there was no general information freely available rumours were one of the sources of the information.
<b>FN4Apr11195-197IN.</b> It's not because I don't support it I do I think we have to do something like this in the organisation and I don't really care which system it is - but I have been lack luster in support of it because I don't understand it and know about it	As an executive it is difficult to show top management support since she doesn't understand the new system. In fact, she knows very little about it. Poor quality communication which leads to an inclination to not accept it.
<b>FN4Apr11281-282IN.</b> we could be much more sophisticated in our project management and sharing of information about projects	She does acknowledge that the organisation could improve their overall project management processes and the sharing/communicating of the projects.

To address these issues I proposed to review the information session and training presentations and make these more consistent and more relevant for staff; and to develop a training feedback sheet. Additional training sessions were offered to any staff who wished to register for them. A new communications plan was created and the Intranet was updated to display up-to-date relevant information about the project for all staff. including the status of the project (i.e. where it had been implemented and when it would be implemented in the remaining departments).

I observed a training session on 9 March 2011 facilitated by the Project Officer, following a coaching session, using the new presentation I had developed. At the end of the session the feedback sheet was completed by all users and all 'Agreed' or 'Totally Agreed' they had been given the opportunity to be actively involved in the session, showing that the feelings and perspectives of staff were acknowledged and that the training process made sense to them and, thus, demonstrating that a meaningful rationale was provided. Both of these indicators suggested that this intervention was autonomously supportive.

During phase one of the research cycle a thorough review of the project was undertaken to determine where the system had been implemented, when and what departments remained requiring implementation. This was used as a basis for updating the organisation on project status as part of the communication plan. The communication plan was developed, tasks assigned to the project team and the dedicated project page on the Intranet was updated with relevant, up-to-date, information and the provision of an email address for feedback and/or registration for training or questions. The organisation also had an internal newsletter and an article was submitted and published promoting the project and directing staff to the updated webpage on the Intranet. Keeping the organisation updated on project progress demonstrated the importance of undertaking the change and provided a meaningful rationale, while the provision of a feedback email address demonstrated the importance of acknowledging staff feelings and perspectives .

#### **6.5.5 Communication – Participation and Consultation**

Participation and consultation by staff at all levels in the project had been encouraged by the organisation. Participation in regard to tactical decision making (i.e. when, where and how to implement the change) had been undertaken in every area of the organisation. This allowed users to feel in control of their situation, thus influencing internalisation. It was expected and was demonstrated that this part of the project was managed particularly well (as outlined in Chapter 2. ), so no interventions were suggested. Below is a sample of data collected demonstrating the success of this part of the project.

Observation Notes	Memo
<b>FN9aMar112-4ITS:</b> It was decided that the system be discussed at every AIMC meeting alternating between a quick catch up and any questions and a heavier discussion which may involve some training.	By discussing the system at each of their meetings we are forcing them really to participate in the implementation process. Information is passed between the main users themselves and presented from the project group at this forum. This may well work to enhance acceptance through participation, information etc.
<b>FN13Apr11107-108IN:</b> I umm really appreciated all the consultation, coordination, the team work that took place between the project crew for lack of a better term and me and my interests	The staff member is demonstrating the importance of consultation to her and how it made her feel as if the project team were concerned about her feelings.
<b>FN7Apr1182IN:</b> the consultation in our area has been very good	No Memo
<b>FN7Apr1187-88IN:</b> and a high level of consultation with management I think that has umm allowed me then to proceed.	Being able to discuss the project with management and how best to implement in this area has assisted this person to persist with the change.

This data sample shows that communication and consultation did indeed play a significant role in this change project. Open communication and consultation have had a positive effect on the acceptance of the change and the new system.

## 6.6 Observations and Reflections – Minor Factors

This section outlines those observations categorised by using the Minor Factors of each External Intervention as outlined in Figure 6-1 as sub-headings.

### 6.6.1 Other Organisational Changes

The project was complicated by an external event: during this phase of the project the organisation underwent another organisational restructure which disbanded the Research and Development (R&D) department – the department responsible for managing the change project. The restructure resulted in the R&D department being split into a new Community Engagement department and some R&D staff were merged with the Information Systems department (renamed the Information and Knowledge Management (IKM) department). The IKM department was responsible for managing the change process from that point onwards.

This restructure was not unusual as several external events occurred throughout the project (on one occasion government funding for a particular social service increased), requiring Uniting Communities to make internal changes (an effect of NPM practices as outlined in Chapter 2. ). As Chapter 5. has already pointed out, the way other changes were managed had a crossover effect on staff willingness to accept additional change, which is why it is important to have consistent project management practices in place for all projects (including restructures).

The restructure of the R&D department had an impact on the project team, who had not been not aware that a change (affecting them) was coming, although staff within the Information Systems department had been made aware of the impending restructure, as the observation notes below demonstrate.

Observation Notes	Memo
<b>FN29Mar11308-309IN:</b> the IKM and the CEU ohh that we weren't told about ... Oh well the two teams concerned are umm information services and R&D.	Clearly this person was not told by the existing unit manager their unit was going to be split up prior to the announcement by the CEO.
<b>FN29Mar11309-311IN:</b> R&D got an email I think it was on a Thursday or Friday from the CEO saying this is happening R&D is going to be split up and Timothy is going to be the head of the new Information and Knowledge Management IKM thing.	See comment above in 308-309. Also the new unit manager will be the existing manager of R&D.
<b>FN29Mar311-314IN:</b> We knew nothing about it. I went up and spoke to the people up in IT a couple of friends of mine up there and they said yes Dugald had a meeting with us and told us about it before that email was sent out don't know the timeframe but they knew about it before we didn't.	The other unit involved were told by their manager in advance of the CEO sending out the email notification. This person was angry they were not told in advance by their manager, as it directly affects them as well.

At this stage the project stalled for a time as the lack of prior communication by the project team's direct supervisor concerning the organisational change led to crowding-out, resulting in the project team members using more external and possibly non-regulation type of regulation, which in turn resulted in amotivation to continue with implementing the change.

This organisational change also led to scope creep of the current project which was not accounted for in the original project plan. Combining two departments – one (R&D) which had already implemented the system while the other had not, meant the Information Systems department had to be pushed up the schedule for implementation and the R&D electronic records had to be split across two new departments.

### 6.6.2 ICT Systems and Ease of Use

Section 0 has already described the way in which ICT systems and their ease of use (or its lack) have affected this implementation project, particularly in terms of: the various network drives; the Intranet and; the way that documents were being saved in multiple locations on multiple occasions resulting in problems with the currency of documents, back-up/access issues and recall of documents.

The Project Officer did not use One-2-One because she was not aware of its usefulness for this project and had not been trained in how to use it. This lack had been resolved in the current phase of the project (as outlined in Section 6.5.3), but illustrated very clearly that ease of use plays a major role in the acceptance of a system. The examples below highlight this issue.

Observation Notes	Memo
<b>FN14Feb111-2PT:</b> Penelope has been updating One-2-One but says it is not user friendly and she feels as if her time is being wasted.	Penelope feels that the online interactive thesaurus is not user friendly in terms of updating and maintaining it. It is not available for people to use yet either and as a result she can't see the benefit in investing the time to keeping it updated.
<b>FN14Feb117-9PT:</b> Penelope feels that One-2-One is an inferior product compared to the word document and that the current version is acceptable as it is so why not just keep it.	Penelope thinks the software is inferior because she doesn't know its capabilities or how to use it effectively. This demonstrates her lack of competence in this area. It is easy for her to use the Word document because this is what she is familiar with.

## 6.7 Resulting Behaviours

While particular instances of behaviour resulting from the various implementation interventions have been discussed throughout this chapter, other instances were also observed during this phase of action research. Below is a sample of observations demonstrating acceptance behaviour.

Observation Notes	Memo
<b>FN25aJan111-20:</b> Stewart just popped into my office and sat down and said the challenge to the system is to get people to accept it and embrace it. He has and it has worked for him really well.	One user's observations of how the implementation was coming along was that the team need to get people to accept the system then they would embrace it. He didn't accept it at first - but once it did he has embraced it. He thinks if we can get others to accept it then they will embrace it as well. How to get them to accept it is the challenge.
<b>FN25aJan115-60:</b> I said this is why I am here. He said the support from this area (Research and Development) has been great and he said "I really appreciate it".	He in particular appreciated the support he got while the system was being implemented in his area. This support could be seen as breaking-down his resistance leading to acceptance of the system and eventually he has now embraced it.
<b>Fn28Feb113-5PT:</b> Daisy didn't embrace the system to start with but at a meeting she was pointing out the systems good points to the Executives. Timothy was pleased and said "I didn't really expect to find an ally in Daisy".	As this person has become more competent in using the system she seems to be starting to accept it. So much so that she is now demonstrating her competence within a group of senior staff. Great result.

These notes illustrate how the two end users in question did not initially accept the new system, although using autonomously supportive techniques resulted in internalisation leading to a more integrated or identified type of self-regulation being used to accept (and in Stewart's case embrace) the change. Below is a sample of observations demonstrating resistance behaviour.

Observation Notes	Memo
<b>FN07Feb116-7PT:</b> Timothy reports that Ursula who was regarded as a champion has become very difficult of late.	Ursula was very proactive and participated a great deal in the implementation in her area with regards to making tactical decisions about implementation and so on. She was viewed as the champion in her work area. However, lately she is not embracing the system - her persistence to continue seems to have stalled - investigate why.
<b>FN07Feb117-8PT:</b> she says that things like Crystal Reports and Scanned Documents folders is an IS issue and says that IS just puts it there.	Ursula's resistance behaviour has come to blaming others (in this case IS) for things. Rather than coming to the team for help and support during difficulty (which she willingly did to start with) she has given up it seems. Failure to persist with the change is an issue here.
<b>FN07Feb1116-17PT:</b> The Finance staff said that the AIMC meeting was cancelled when it hadn't been.	Even though this was an AIMC meeting all staff knew that the system implementation would be discussed at the meeting. In order to be as disruptive as possible to the project team the Finance team demonstrated their negative behaviour by trying to influence all other staff members that the meeting had been cancelled when in fact it had not been cancelled.

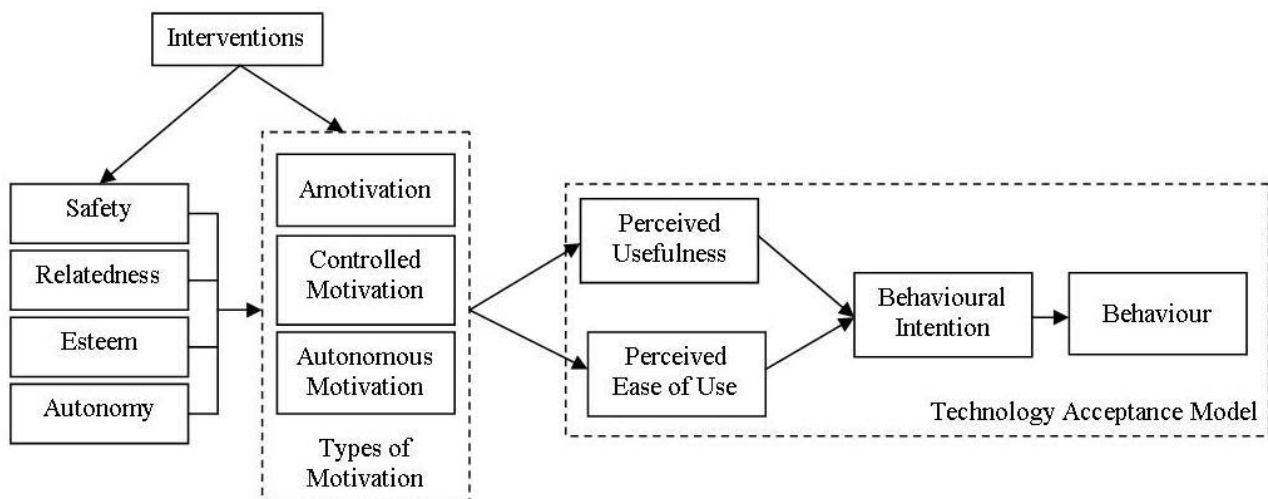
As was the case for the tentative findings from the pilot project, where it was found that, regardless of the level of participation offered moments of crisis (in confidence) can be expected. This was demonstrated by Ursula who, while initially accepting the change and being seen as a champion in her service area, later reportedly demonstrated resistance behaviour. The resolution of these moments of crisis and, particularly, the speed with which they are resolved using consultation, education and participation, is crucial for success.

## 6.8 Discussion

Drawing on the fact that needs underlie all motivation as outlined in the literature review, the autonomously supportive interventions presented in Table 6.2 appeared to have had an impact on the type of motivation being demonstrated by both the project team (to implement the change) and end users (to accept the change). Using the TAM as a basis, a new Motivational Technology Acceptance Model (MTAM) has been developed (as presented in Figure 6.2) focussing on the interventions and how they might affect needs satisfaction, and the type of motivation being displayed which may have an impact on perceived usefulness and perceived ease of use (see Section 6.6.2) which has a direct effect on behaviour.

It is important to state again that this project is based on the assumptions that:

- People are active organisms – that is: where the organism is volitional and initiates their own behaviour (they have intrinsic needs and physiological drives) (Deci and Ryan, 1985; 2000b);
- These basic needs are universal and “energise and direct behaviour” (Latham, 2007 p.25);
- Satisfying these needs is a universal necessity important of all people’s psychological health (Deci and Ryan, 2008).



**Figure 6-2: Motivational Technology Acceptance Model**

This new model integrates TAM with motivation based on the work of Maslow’s Hierarchy of Needs and Deci and Ryan’s Self Determination Theory. This model can be explained in the following way:

- Needs underlie all types of motivation and are described here as Safety; Relatedness; Esteem and Autonomy;
- The more autonomously supportive the intervention, the more likely crowding-out will be reduced and possibly internalisation will occur and an autonomous type of self-regulation such as integrated or identified self-regulated behaviour will be used leading to a more autonomous the type of motivation based on Deci and Ryan’s Motivational continuum, displayed in Table 5-1 as Type of Regulation;



- The more autonomous the motivation the greater likelihood that the perceived usefulness and perceived ease of use of the new system will be favourable, leading to;
- An increase in behavioural intention and thus behaviour to accepting and/or persisting with the change and system being implemented.

It is important at this stage to redefine both Perceived Usefulness (PU) and Perceived Ease of Use (PEOU) to appropriately reflect user's needs and the type of motivation they use for acceptance of a new technology (or any change event). PU and PEOU have both been defined several times in the various versions of TAM that exist. For example, Malhotra et al. (2008, p. 275) redefined PEOU as such: "The developmental focus of the endogenous theory broadens perceived ease of use (PEOU) to include affective psychological feelings. Internal PLOC is associated with perceptions of volition and autonomy. The resulting behaviour is perceived as relatively effortless and easy." For the purposes of this study I have provided my own definitions of PU and PEOU to account for the expanded understanding of motivation presented in this thesis, as outlined below.

<b>Construct</b>	<b>Traditional TAM Definition</b>	<b>Proposed MTAM Definition</b>
Perceived Usefulness	"the degree to which a person believes that using a particular system would enhance his or her job performance." (Davis 1989, p. 320)	The degree to which a person perceives the system will be useful based on the user's autonomous type of motivation to use the system
Perceived Ease of Use	"the degree to which a person believes that using a particular system would be free of effort." (Davis 1989, p. 320)	The degree to which a person believes that using a particular system would be free of effort based on the users autonomous type of motivation to use the system.

This new model utilising these definitions of PU and PEOU was used in the next phase of action research and a survey was developed to test this new model.

## 6.9 Chapter Summary

The CFMC (Figure 6-1) has been used to structure and analyse data collection in this phase of the action research study. Using this model, I have discussed the autonomously supportive interventions (based on project management techniques) which can be used to reduce the likely crowding-out effects caused by the change process and the system being implemented. The interventions used were:

- Resurrecting the project plan;
- Support pack for Leaders;
- Quality audits process and template;
- Information and training session presentations updated. Feedback sheet implemented. Training session registration;
- Having a process for documenting system changes;
- Supporting and coaching the project officer in project management and change management techniques. As well how to use the One-2-One software; and
- The creation of communication plan and updates to the Intranet project webpage.

Using the same data collection and analysis technique outlined in Chapter 5, open coding associated with grounded theory, was used to analyse the 21 data documents and 6 interviews. Using open coding, it has been demonstrated in this chapter that the above interventions, whilst based on traditional project and change management techniques, have been applied in an autonomously supportive way as they promote:

- The importance of undertaking the change;
- The provision of a meaningful rationale for undertaking the change and using the new system. This could be akin to TAM's perceived usefulness;
- Acknowledging the feelings and perspectives of staff undergoing the change; and
- Being respectful and concerned about end users, particularly those finding it difficult to accept the change and the system being implemented.

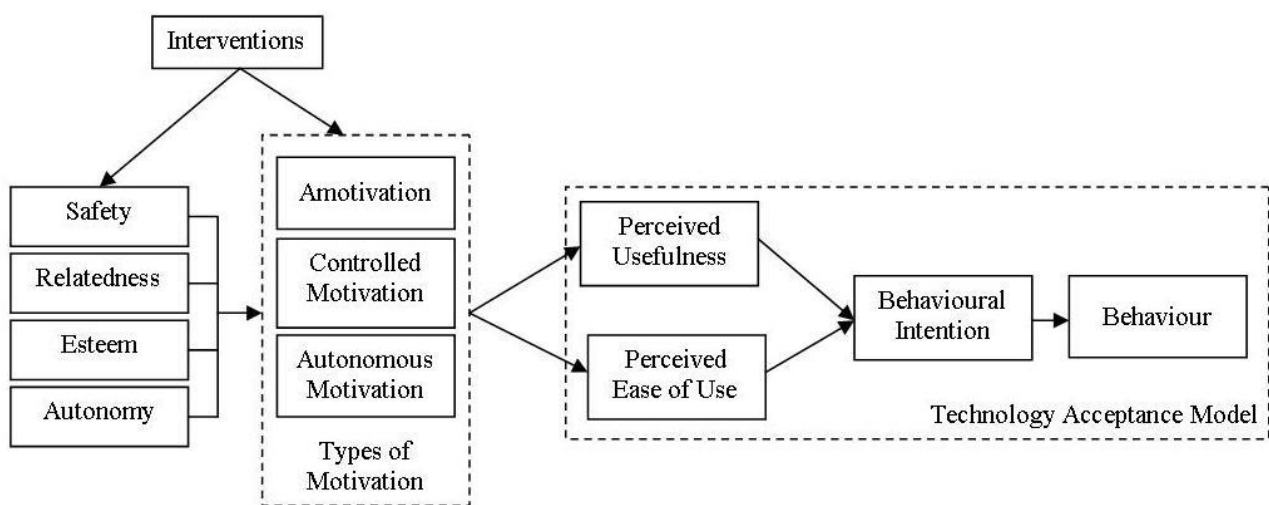
As outlined in Section 6.2 NPOs typically use participatory, inclusive and accessible processes, which is an important motivating factor for their workers. Applying project and change management interventions, has, at times, been difficult in this phase; however, I have drawn on these processes and ensured that the interventions have been autonomously supportive, resulting in acceptance behaviour as demonstrated in section 6.7.

Based on the findings in this chapter the MTAM has been created and PU and PEOU have been redefined to reflect the expanded definition of motivation presented in this thesis. In the next chapter further interventions will be applied and I will be focussing on how these might affect needs satisfaction and motivation and what impact this has on PU and PEOU and the resulting behaviour.

## Chapter 7. Empirical Investigation – Action Research Phase Three

### 7.1 Introduction

In Chapter 6, I used the Change Factors and Motivation Crowding model to structure and analyse the data gathered during the Action Research phase; and to discuss how autonomously supportive interventions could be used to reduce crowding-out during the implementation of an electronic functional classification scheme (FCS) to manage Uniting Communities (UC) storage and retrieval of electronic documents more effectively. The development of a new Motivational Technology Acceptance Model (MTAM) to guide this phase of the action research study was discussed at the end of that chapter, as illustrated in Figure 7-1. A survey developed to test this model will now be discussed further in the present chapter.



**Figure 7-1: Motivational Technology Acceptance Model**

This model suggests that needs (safety; relatedness; esteem and autonomy) underlie all types of motivation and, thus, behaviour. The literature review findings indicated that if a user's needs were satisfied and the change and project management interventions occurring were perceived as autonomously supportive (e.g. providing a sense of control), this would promote internalisation of the change process (the external regulation) and would result in autonomous motivation to accept change, thus reducing possible crowding-out effect/s.

Redefining the concepts of Perceived Usefulness (PU) and Perceived Ease of Use (PEOU) which form the basis of TAM (and its associated models) was necessary to more appropriately reflect the basic needs underlying behaviour and motivation. The definitions used in this study are therefore:

- Perceived Usefulness: The degree to which a person perceives the system will be useful based on the user's autonomous motivation to use the system.
- Perceived Ease of Use: The degree to which a person believes that using a particular system would be free of effort based on his/her autonomous motivation to use the system.

Phase Three of the study ran from the 4<sup>th</sup> July to the 10<sup>th</sup> December 2011. During this time I was embedded within the implementation project team for a period of six weeks. Following this phase, I developed a survey and administered it online to test the accuracy and effectiveness of the MTAM. This last phase of the project was somewhat brief, as UC offered me a full time position as Major Projects Manager within the Information and Knowledge Management department. UC had previously demonstrated their commitment to this research project by providing me with a top-up grant to complete my study as a full-time PhD candidate; and the offer of this full-time position made it clear they perceived the project and change management techniques I had been using to be successful – and wished to continue using these approaches in a new project.

I commenced full time employment with UC in September 2011 and, naturally, I was no longer able to focus my attention primarily on this action research project. I was, instead, now responsible for implementing a new organisation-wide electronic case management system (CMS), which had been purchased as a commercial off-the-shelf (COTS) software solution.

The survey which had originally been created for the action research project was therefore administered, following implementation, to the users of the CMS in several service areas during the second half of 2012. In my new project I continued to apply project and change management process in the same autonomously supportive way that I had introduced during the action research study, and this allowed me to administer the survey in relation to the case management implementation project, rather than the implementation of the FCS, while still obtaining information relevant to this thesis.

As in the two previous chapters, the material presented in this chapter follows the structure of the action research project and includes:

- An outline of the problem situation;
- A general plan outlining the proposed interventions and how they might resolve the problem situation;
- The action taken to implement those interventions and whether they seemed to be working or not to resolve the problem situation; and what (if any) impact these had; and
- A reflection of how this action research cycle progressed.

A summary of the findings from Chapter 6. is presented in Section 7.2.

## **7.2 Problem Situation**

Findings from Phase One of the action research study suggested that the implementation of an electronic FCS was:

- managed loosely using some established project management practices; and
- seemed to be lacking a coordinated approach (among other things) which appeared to adversely affect the success of the project.

The Change Factors and Motivation Crowding Model (see Figure 6-1) illustrates a set of factors which have the potential to crowd-out motivation when employees perceive the new procedural changes and change management interventions to be controlling or affecting their self-perception in some way.

In Phase Two of the study I applied commonly recommended project management practices in an autonomously supportive way (refer to Table 6-2 for more information) to these identified factors. As Chapter 6. has noted, the interventions must not prejudice the success of the underlying project and have therefore been used to generate testable hypotheses, leading to the creation of the MTAM. The series of tables below (one for each factor affecting motivation) provides an overview of the interventions applied in Phase Two; the way/s in which they are autonomously supportive; and what effect they had (at that point in time) on motivation.

**Table 7-1: Leadership Factor**

<b>Intervention</b>	<b>Autonomously Supportive</b>	<b>Effectiveness</b>
Support pack to encourage a more participatory style of leadership.	Importance of Change Acknowledging perspectives and feelings	When used Managers demonstrated a more participatory style of leadership and an integrated or identified type of regulation to guide behaviour and thus more autonomous motivation to accept the change themselves. This demonstrated the importance of change to end users and their perspectives and feelings were acknowledged by the Managers in a team meeting setting.

**Table 7-2: Project Management – Time; Quality; Scope**

<b>Intervention</b>	<b>Autonomously Supportive</b>	<b>Effectiveness</b>
Project Plan reintroduced to reduce scope creep; monitor progress; provide a timeframe for completing tasks	Importance of Change Meaningful rationale	During the process of re-creating the project plan it was evident the Project Officer was demonstrating amotivation as the activity was perceived to be controlling. This was overcome by providing a meaningful rationale for its importance and through coaching in how to create and maintain a project plan resulting in a move away from amotivation to internalisation of the change process and an integrated or identified type of regulation being used leading to autonomous motivation thus reducing the crowding effect.
Quality Audits Process and Template	Importance of Change Meaningful rationale Acknowledging perspectives and feelings	Through consultation the process was documented and a template created for all to use. This promoted internalisation as it gave those users perceived control over the process and boosted their competency to carry out the task. Resulting in an integrated or identified type of regulation being used leading to autonomous motivation being displayed.
Process for documenting system changes	Importance of Change Meaningful rationale Acknowledging perspectives and feelings Being respectful and concerned	Implementing a process for documenting system changes which was shared with end users affects the type of self-regulation being used by workers to accept/persist with the change.

**Table 7-3: Project Management – Human Resources**

<b>Intervention</b>	<b>Autonomously Supportive</b>	<b>Effectiveness</b>
Project Plan reintroduced to assign roles and responsibilities to project staff	Importance of Change Meaningful rationale	Defining roles and responsibilities gives staff a sense of ownership and control which is perceived as being supportive. The Project Officer was initially resistant to redeveloping the project plan. A meaningful rationale for its importance was explained and coaching was given in how to create and maintain the plan; the Project Officer then demonstrated she had internalised the change process and used a more integrated or identified type of regulation resulting in autonomous motivation being displayed when updating the plan and in continuing with implementing the change. Milestones were set and achieved.
Coaching in basic project and change management techniques	Importance of Change Meaningful rationale Acknowledging perspectives and feelings	Providing coaching on basic change and project management techniques, such as creating and maintaining a project plan and by focusing on reducing the anxiety of end users by using a participatory style of leadership in leading change boosted the Project Officer's esteem and self-determination resulting in internalisation and a more integrated or identified type of regulation being demonstrated to continue to implement the change.
Training on the software (One-2-One)	Importance of Change Meaningful rationale Acknowledging perspectives and feelings	The Project Officer demonstrated amotivation to use this software because no meaningful rationale was given and nor was its importance demonstrated by lack of any formal training. The importance of the software to this project was explained, as were the benefits of using it. Training was provided and this resulted in the Project Officer using a more integrated or identified type of regulation and thus demonstrating autonomous motivation to use and maintain this software.

**Table 7-4: Communication – Quality and Relevance**

<b>Intervention</b>	<b>Autonomously Supportive</b>	<b>Effectiveness</b>
Information and Training Session presentations updated	Importance of Change Meaningful rationale	A consistent meaningful rationale was included in training sessions as well as the importance of the change. This resulted in a more autonomous type of motivation being displayed through active participation in these sessions which was also evident in training session registrations.
Training Feedback sheet implemented	Acknowledging perspectives and feelings	Implementation of the feedback sheet demonstrates to end users that their perspective and feelings are important. Feedback from training session indicated that uses 'Agreed' or 'Totally Agreed' they were given the opportunity to be actively involved in the session and the session did make sense to them. Resulting in internalisation and a more integrated or identified type of regulation being used.
Training Session Registrations	Importance of Change Acknowledging perspectives and feelings	End users could register for additional training sessions as and when they felt they needed it. A number of training sessions were booked which indicated that end users were demonstrating an autonomous type of motivation to undertake further training and persist with the change.

<b>Intervention</b>	<b>Autonomously Supportive</b>	<b>Effectiveness</b>
Communications Plan with regular organisation wide updates	Importance of change Meaningful rationale Acknowledging perspectives and feelings	The communications plan was created and tasks assigned to project staff. Relevant up-to-date information was provided to the organisation via an intranet project page and in the organisation's monthly newsletter. An email address was provided to staff to ask questions and register for training. As demonstrated above by way of training registrations internalisation has occurred and a more autonomous type of motivation was being displayed by end users to persist with the change.

During Phase Two of the study, progress was made in terms of providing a degree of professionalism now being used to apply project management practices appropriately. More needed to be done, however, in terms of actually leading the change. Although I was not actively involved in the project, I found the project team failed to implement some important elements (as outlined below) of the project which had been documented in the updated project plan. Some problems which were identified in Phase Two still persisted:

- The policy and procedures, an important part of an implementation project, were still not complete;
- While a communications plan had been developed, the project team were not regularly updating progress via the Intranet project page;
- The online version (One-2-One) of the FCS, while updated, was still not available to end users; and
- Implementation momentum had stalled in two service areas.

### **7.3 Planning**

During this phase of the action research cycle the interventions outlined in Tables 7.1; 7.2; 7.3 and 7.4 were expanded upon (where possible) and monitored to ensure the project management practices were implemented with the maximum degree of professionalism possible in support of the more intrinsically motivated staff within UC and the plans were followed to complete scheduled tasks,

- Following the project plan and using it to ensure tasks were completed and, if possible, completed on time, e.g. completing the policy and procedures and the implementation in the remaining/overlooked service areas;
- Define the roles and responsibilities of the project team more clearly;
- Continuing to increase the competency levels of current project staff; and
- Regularly updating project information for the organisation.

My plan was discussed at a project meeting while I was embedded in the team for Phase Three of the project. At first the Project Sponsor was concerned that we were just going over some items again, but during the meeting it became apparent to both the Project Sponsor and to me that a number of tasks had still not been completed during my absence, as demonstrated in the observation notes shown below.

Line No.	Notes	Coding
9-10	We discussed Christies Beach as an example - Timothy thought this had been done - but all we had was 2 x information sessions and nothing else has been done.	Project Mgmt Quality Leadership
10-12	I asked Penelope about the status of this and she said Bill is just no longer interested and of course she hasn't followed up with any assistance at all, so nothing has happened.	Resistance Leadership
12-14	Timothy brought up the actions I want to undertake during this cycle and we discussed them briefly he was concerned that we may be going over some of the things again.	Project Mgmt Quality
14-15	I said that is true but we will be actually doing them this time - e.g. Updating the Intranet with relevant project information.	Project Mgmt Quality

Following this phase of the action research an online survey was administered in late 2012 to test the MTAM.

## 7.4 Action

During Phase Three of the action research study I was embedded within the project team from the 4<sup>th</sup> July to the 12<sup>th</sup> August 2011. I then commenced full time employment with UC implementing a new CMS. I continued to work part time on my thesis from September 2011 to July 2012 and this work included analysis of the data collected during Phase Three, as well as the development and administration of a survey to staff who had been involved in implementing the CMS in several service areas.

### 7.4.1 Action Research – Data Collection

Data collection while embedded with the project team consisted of observations made during various implementation activities, such as analysis sessions and project meetings. A total of 11 data documents were created over the six-week period. These documents were categorised according to the implementation activity being undertaken at the time as outlined in Table 7-5.

**Table 7-5: Data documents created by category and date**

Implementation Project Team Meetings	Business Analysis Activities	One-on-One Discussions	Observations
04 July 2011	13 July 2011	7 July 2011	11 July 2011
07 July 2011			13 July 2011
11 July 2011			27 July 2011
8 August 2011			27a July 2011
			1 August 2011

The data collected were analysed using the same open coding technique associated with grounded theory as for the first two phases of the project (outlined in Chapters 5 and 6). The data documents were fractured into segments which made sense when viewed as individual pieces of data and conceptual labels (coding the data) were applied. Throughout the coding process I continually asked myself: what is this about? what is happening? and what is being referenced here? (Locke 2001). This resulted in only minor changes to the conceptual labels, as outlined in Phase One – and the findings from this phase match directly with the factors affecting motivation and acceptance.



### 7.4.2 Survey – Data Collection

After I had completed the third action research phase, my focus turned to my new role within the organisation. Drawing on the qualitative findings of the action research phase of this study, I developed and administered a survey online to test the MTAM between 24th August 2012 and 12th September 2012.

The survey was designed on the basis of a review of the works of Oppenheim (1994) and de Vaus (2002) – the stages of survey development consisted of:

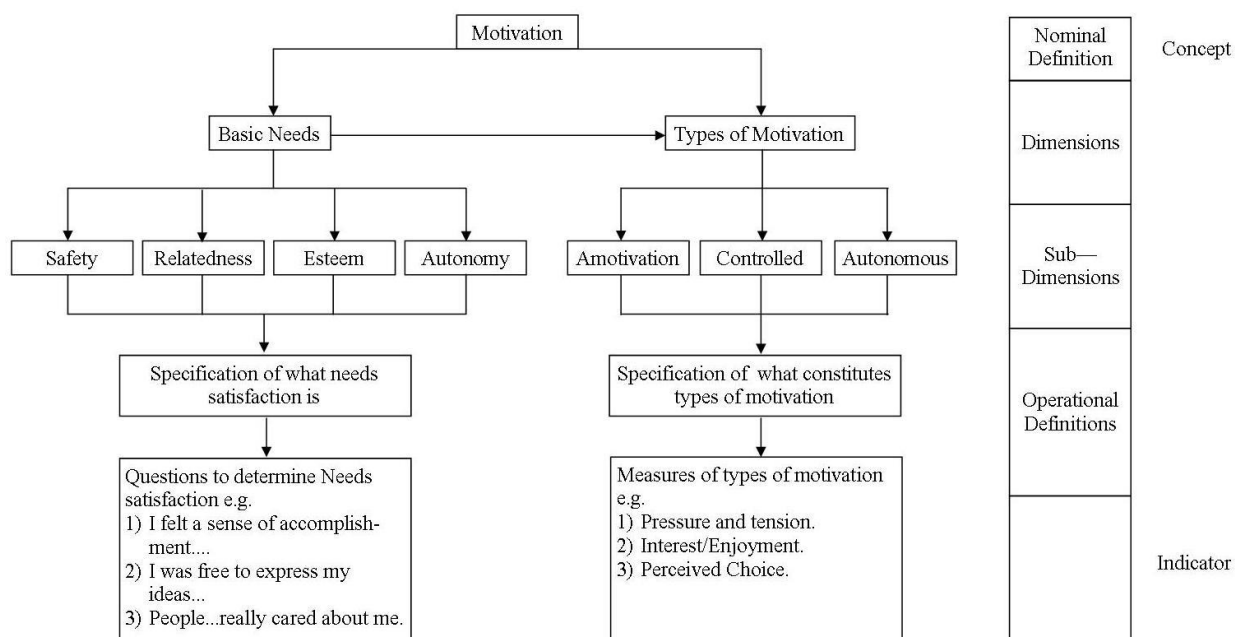
- 1) Creating the general aim of the study and the theories to be tested. In this research project I have stated that Motivation Crowding Theory is the main theory being used, together with Self Determination Theory in relation to technology acceptance. This then leads to;
- 2) Creation of a more specific set of aims by way of generating a set of conceptual propositions for this study. These were outlined in Chapter 1 of this thesis as the main research questions:
  - a. What is technology acceptance and how important is motivation for technology acceptance?
  - b. What is motivation and how does organisational change affect it?
  - c. What change management interventions are autonomously supportive and are these likely to result in increased acceptance of an ICT-enabled organisational change?

Questions a) and b) have been answered in Chapter 3 and question c) was re-phased to focus on the problem situation as outlined in the empirical chapters as: *Can we develop, test and refine an autonomously supportive organisational change implementation strategy to reduce the crowding-out effect of intrinsically motivated staff in an organisation?*

This led to:

- 3) Operationalisation of the conceptual aims specific to this research study so that indicators could be formulated for testing.

This process of clarifying concepts to developing indicators is described as “descending the ladder of abstraction” (de Vaus, 2002, p.42), moving from general or broad aims to specific aims and then operationalising the aims. The process of ‘descending this ladder’ has been applied to develop this survey and an example of operationalising the motivation concept is summarised in Figure 7-2.



**Figure 7-2: Clarifying Concepts (adapted from de Vaus, 2002)**

Once the concepts were clarified indicators were selected. A combination of well-established and previously tested measurement tools was used (and, where possible, items were adapted to this study) from the psychology, organisational change and information systems research fields (see Table 7 – 6 for the structure of the survey). For example, Deci and Ryan’s Self Determination Theory website at Rochester University provides a number of questionnaires for researchers to use. These questionnaires are designed to measure motivation in a number of different settings and perspectives, ranging from laboratory experiments, health and sporting perspectives to school and work settings. Where it was not possible to use existing items, I created questions on the basis of the literature and the options provided for responses followed the same format as those of surrounding questions for consistency. The response items used throughout the survey were measured using a seven point Likert scale (ranging from 1 = strongly disagree to 7 = strongly agree; or 1 = not true at all to 7 = very true), with the exception of the demographic information.

A pre-test of the survey was undertaken by five people to test the suitability of the tool and identify any errors; and this also enabled an estimate of the time required to complete the survey. The results of the pre-test were discarded. Following feedback, the survey was revised to correct misspellings, wording errors and changes to the layout. A pilot test was then conducted using the revised version with a further eight people and its reliability tested using Cronbach’s alpha (see Section 7.5.2) resulting in some additional items being removed to increase the reliability of the survey. The final survey was grouped into six sections where items were used to measure seven constructs of the model as outlined in Table 7 – 6. The sections of the survey were:

1. Perception of your organisation;
2. Attitude towards organisational change;
3. Motivation to undertake change;
4. Change management;
5. How you view change; and
6. Demographics

**Table 7-6: Structure of Final Survey Instrument**

Constructs	Measurement Tool	Author(s)/Copyright Owner	# of Questions	Question #’s in Survey
Basic Needs Satisfaction	Support for Change Questionnaire	Maurer (1996)	2	1; 3
		Researchers’ Questions	1	4
	No Name Found	Venkatesh & Bala (2008)	1	6
	The Change Scale	Trumbo (1961)	3	7-9
	Basic Need Satisfaction at Work Scale	Edward L. Deci & Richard M. Ryan Self-Determination Theory (The SDT Group) Rochester University	14	22-31 39-41 53
	Perceived Autonomy Support – The Work Climate Questionnaire (WCQ)	Edward L. Deci & Richard M. Ryan - See above	3	43-44 51
	Intrinsic Motivation Inventory	Edward L. Deci & Richard M. Ryan - See above	1	61
Types of Motivation	Intrinsic Motivation Inventory	Edward L. Deci & Richard M. Ryan - See above	11	15-21 32-35
	No Name Found	Gagne et al. (2000)	3	36-38
Change Management Interventions	Support for Change Questionnaire	Maurer (1996)	1	2
		Researchers’ Questions	1	5
	No Name Found	McNish (2001)	3	42; 46; 56
	Perceived Autonomy Support – The Work Climate Questionnaire (WCQ)	Edward L. Deci & Richard M. Ryan - See above	1	45
	No Name Found	Gagne et al. (2000)	5	47-50; 52
	No Name Found	Venkatesh et al. (2003)	2	54-55
Perceived Usefulness and Perceived Ease of Use	Intrinsic Motivation Inventory	Edward L. Deci & Richard M. Ryan - See above	4	57-58 63-64
	No Name Found	Venkatesh et al. (2003)	2	59-60
		Researchers’ Questions	2	62; 65
Behavioural Intention	Resistance to Change Scale	Oreg (2003)	6	10-14; 70
		Researchers’ Questions	6	66-69; 73-74
Relevance & Use		Researchers’ Questions Venkatesh and Bala (2008)	2 1	71-72; 75
Demographics		Researchers’ Questions	8	76-83

As illustrated in Table 7 – 6 the items in each construct were tested using a combination of questions from a number of existing surveys including Maurer’s (1996) Support for Change Questionnaire; Trumbo’s (1961) The Change Scale, Venkatesh & Bala (2008), McNish (2001); Gagne et al. (2000); and Oreg’s (2003) Resistance to Change scale. The majority of items used to measure the Basic Needs Satisfaction construct were, however, sourced from Deci and Ryan’s Self Determination Theory (SDT) website (2012) at Rochester University. Items were chosen from the:

- Basic Need Satisfaction at Work Scale – This scale was developed as a work domain specific survey based on the Basic Psychological Needs Scale which assesses need satisfaction;
- Perceived Autonomy Support – The Work Climate Questionnaire (WCQ) – This survey is part of a series of surveys in different climates (e.g. the sports climate; the learning climate) which assesses “the perceptions of individuals about the degree to which a particular social context is autonomously supportive versus controlling” (SDT website, 2012); and
- Intrinsic Motivation Inventory – this survey assesses the “levels of interest/enjoyment; perceived competence; effort; value/usefulness; felt pressure and tension; and perceived choice whilst performing” a particular activity (SDT website, 2012).

Using these survey items to test the MTAM it was expected that if a user’s salient needs had been satisfied during the change process they would display autonomous motivation for that change, leading to acceptance behaviour. However, it is not possible to directly motivate a person to satisfy his/her needs: we can only create conditions to help individuals satisfy their needs (see Section 3.4). During this study I have therefore used interventions (see Section 6.3) to create the conditions necessary to enable users to satisfy their needs. Therefore, the following the propositions were tested:

**P1:** If overall a user’s needs are satisfied this will have a positive influence on the display of a more autonomous type of motivation; and

**P2:** Autonomously supportive interventions will have a positive influence on needs satisfaction.

The continuum of motivation focussing on types of motivation presented in Chapter 3. and summarised in Table 5-1 has been classified into: autonomous motivation, controlled motivation and amotivation (Deci and Ryan, 2000a; 2008; Ryan and Deci, 2006). In this study amotivation has been measured as pressure and tension; autonomous motivation has been measured in two ways: in terms of interest/enjoyment in the task; and in terms of having perceived choice in the task. It was also expected that interventions would promote internalisation of the change process, leading to a more integrated or identified type of self-regulation and thus the display of a more autonomous type of motivation. Therefore, the third proposition was:

**P3:** Autonomously supportive interventions will have a positive influence on the display of an autonomous type of motivation.

As with the study undertaken by Venkatesh et al. (2002) I anticipated that type of motivation is likely to have an impact on both perceived ease of use (PEOU) and perceived usefulness (PU) of the system being implemented. In contrast to that study, however, since both PEOU and PU have been redefined for this research project (see Section 7.1), it was necessary to test the following (redefined) propositions:

**P4:** Autonomous motivation will have a positive influence on perceived usefulness.

**P5:** Autonomous motivation will have a positive influence on perceived ease of use.

A large amount of empirical evidence exists supporting the relationship between PU, PEOU and behavioural intention (see, for example, Davis, 1989; Venkatesh 2000; Venkatesh, et al. 2002; Venkatesh and Bala 2008; Lin and Bhattacharjee 2010; Luo et al. 2010 and Park 2010)). Because the definition of PU and PEOU has been changed and behavioural intention has been operationalised as Acceptance, Persistence and Resistance in this study, the following proposition will be tested:

**P6:** Behavioural intention will be moderated by perceived usefulness and perceived ease of use.

Only one item was used to operationalise actual behaviour (use) of using the system which was adapted from Venkatesh and Bala (2008) by asking respondents “On average how much time do you spend on TCM (the system) each work day?” – With the response being captured in hours and minutes.

## **7.5 Observations and Reflection**

This section outlines the results of the third action research phase and provides a discussion of the findings from the survey. These apparently disparate groups of material are presented in the same section of this chapter (though in separate sub-sections) because they were both part of Phase Three of the project.

### **7.5.1 Action Research Results**

Below is a summary of the reinstated interventions which were initiated in Phase Two of this study (see Section 7.3) and applied during the implementation of the electronic FCS within the UC Executive team, together with the observations concerning how effective those interventions really were.

#### ***The Project Plan***

The project plan was designed to be used as a tool to ensure that: tasks were not overlooked; tasks would be achieved in a certain timeframe; milestones were recorded; and that the project plan could be used as a reporting tool for project progress to the rest of the organisation.

During a project team meeting, the Project Sponsor asked for an update on the implementation in one service area which he had assumed was already complete. The update, however, showed that the project officer had only completed two information sessions and it was reported that the local manager was “just no longer interested”. It was clear there was a lack of awareness by the Project Sponsor of project progress and, to some extent, it appears that leadership and responsibility for ensuring implementation was achieved as per the project plan was also missing from the project team itself. During that meeting we reviewed the project plan and discussed its importance, as demonstrated below.

Observation Notes	Memo
<b>FN11Jul11:6-70.</b> I went through the project plan and said we need to schedule dates to revisit areas that implementation hasn't worked and units that still needed implementation.	Reviewing the project plan and having to revisit areas where implementation has failed increased the time of the project which was not originally accounted for.

This led to the project plan being added as a standing item on the project team's meeting agenda, with project team members providing updates on the tasks assigned. Such an outcome demonstrates good project management practice and provides ownership and control to the team – and also ensured the plan could now be used for reporting on project progress, as outlined below.

Observation Notes	Memo
<b>FN8Aug11:3-50.</b> Timothy has requested that I supply 2 copies of the Project Plan to him - one which shows more of the Calendar on it as he says the Reports he has to give look better is they are presented in a visual format.	The project plan is now being used for reporting on project progress which was previously unavailable. Demonstrates good project management and utilisation of the project plan for more than just scheduling tasks.

Despite having a project plan which included tasks and responsibilities, it was clear roles and responsibilities among the project staff still needed clearer definition. An example of this was demonstrated when the Project Sponsor made a decision regarding the structure of the FCS without consulting the Project Officer, who felt her position in the project had been undermined.

Observation Notes	Memo
<b>FN27aJul11:68-700.</b> Timothy said that Penelope had complained that she had been undermined yet again by these decisions that are made without her knowledge.	The project officer feels it is her role and responsibility to make decisions and she is expressing her frustration at not being involved in these decisions. Clear roles and responsibilities, including decision making capabilities needs to be communicated clearly to the project team.

This led to a redefinition of the project team structure; and a roles and responsibilities matrix was introduced as part of the overall project plan. This matrix was then used at the start of the CMS implementation and clearly defined communication and reporting lines, as well as the roles and responsibilities of each member of the project team.

As per the updated project plan, the online version of the FCS (One-2-One) was released on the Intranet for all end users during my first week back with the project team; and the policy and procedures were drafted and supplied to the senior administrative staff for their review and feedback within the first three weeks of my being embedded within the team.

Using the project plan as a tool for task scheduling, monitoring and reporting on progress is important in any project, but it does need to be maintained and reviewed regularly to ensure the project remains on track. It appeared that the benefits of using the plan were not being realised by the project team, yet updating the plan and adding it as a standing item on the project team agenda led to the outstanding items being completed quickly.

The plan was also used for reporting purposes and, once the benefits were realised, e.g. using it as a reporting tool, the project team appeared more motivated to complete scheduled tasks on time. It seemed to take some time (over the life of the study) for the team to develop an understanding of the importance of the plan and their competence in using it as it was intended, but it was evident that the project team members themselves were beginning to apply a more professionalised approach in the way the project was being managed; and the Project Sponsor became more actively involved in monitoring progress and used the plan as a reporting tool to the rest of the organisation.

### ***Project Communication***

As a result of re-instigating the plan during this phase of the project the intranet was updated regularly and end users were encouraged to use it as their first source of project information. A new Handy Hints section was also developed in consultation with end users and added to the project page. The project team were now using – and promoting the use of – the Intranet as a reliable, up-to-date source of communication with the rest of the organisation. This was a noticeable change from previous phases of the study in terms of: a) the project team's willingness to do the task; and b) the fact that end users now had access to up-to-date project information.

The result of providing the project team with information and coaching throughout the whole action research study made it apparent that the project team had developed their skills and knowledge in first learning and then applying the basic project management processes, a benefit from which the end users and the organisation as a whole have gained. The project team members were energised to complete the updates on the Intranet and were enthusiastic in recommending this as the first source of project communication with end users.

During this phase of the action research project I worked closely with the Executives and their assistants on the implementation of the FCS in their area using a participatory style of leadership and applying interventions in an autonomously supportive way. An example of observation notes demonstrating this approach is presented below.

Observation Notes	Memo
<b>FN7Jul11:22-23O.</b> I explained that when moving over to a new system there is a time period in which you may find it difficult to use the new system	I listened to her concerns and acknowledged her perspective and feelings - I then explained that it is normal that learning a new system may be difficult at first.
<b>FN7Jul11:24-25O.</b> however with a bit of persistence over time then she would become familiar with this new system.	I went on to say that if she continues to persist with the change her competence would improve with using the new system and it would become easier to use.
<b>FN7Jul11:26-27O.</b> Veronica went on a little more about it and I let her. I just listened to what she had to say,	The user continues to talk about her concerns and I acknowledge her perspective and feelings whilst being respectful and concerned - letting her verbalise her concerns is important.
<b>FN7Jul11:27-28O.</b> acknowledged her feelings on the matter by saying that these are the types of issues that we will work through together during over the coming weeks.	See 26-27 above and by saying we will work through these issues together indicates my participation in the process with her.
<b>FN7Jul11:29-30O.</b> She seemed relieved at this and let out a sigh saying that's good that we will be able to go through it together.	By listening to her concerns and saying we will work through this together seemed to reduce her anxiety and she is happy that we will work through it together. This should help lead to persistence and eventually acceptance.

Some of the executive assistants were using the system consistently and were even encouraging other executive assistants to try it. However, one executive assistant was struggling to use the system, despite trying. This was discussed with the Project Sponsor who thought a group training session would be beneficial but as only some assistants were struggling I suggested I conduct a series of one-on-one coaching sessions. Using a participatory style of leadership when providing the extra support appeared to be successful as demonstrated below in a series of observations notes taken over a period of time.

Observation Notes	Memo
<b>FN7Jul11:25-26O.</b> Veronica says it is not as if she has not tried but she just can't use it and what they have works and they would like to stick with that.	The user says she has tried but what they have works and she just can't use the new system. This is a clear sign of resistance - not letting go of their old system and not using the new system. It may be an ease of use issue as well as perceived control i.e. the action is controlling so move to amotivation instead.
<b>FN13Jul11:5-6O.</b> whereas Veronica is really struggling with it and I feel would be best with one-on-one training sessions, multiple times. He agreed to this then.	See 3-4 above. Whilst one person in the group is using the system correctly another is struggling. One-on-one support is suggested rather than a group training session. The project sponsor agrees with this approach.
<b>FN27aJul11: 74-75O.</b> and getting the hang of using the system now since I had been sitting with her regularly.	I have been working closely with this person and her competence has improved in using the new system.

While it is not always possible for a project team member to provide this level of one-on-one support during an implementation project, this experience does demonstrate how effective it can be. During this study I have discussed the importance of leadership in a change project (see Section 6.5.1), at the Service (local) management level. Managers who demonstrate a more participatory style of management appear to support and provide encouragement to their staff throughout the implementation project. It would be appropriate, therefore, to suggest that managers may play an active role in identifying those staff that appears to be struggling with a new system and provide the necessary level of one-on-one support at the local level.



One executive assistant made it extremely difficult for me to even begin the implementation process. Over a period of three weeks she repeatedly refused either to meet with me herself or to provide me with access to the Executive. This demonstrated both resistance as well as her desire to maintain perceived control over the situation by failing to schedule appointments. The issue was escalated to the Project Sponsor for action but the matter was resolved unexpectedly when the assistant had to take a week's personal leave (for reasons entirely separate from the project) at short notice while this issue was still under discussion.

In her absence, the Executive could not find an extremely important document and called on the Project Sponsor and myself for assistance. His inability to locate the document directly affected the Executive and highlighted the importance of undertaking the change. He therefore agreed to ensure that his assistant would be available to me on her return to complete the implementation. As the findings of the Pilot Project reported in Section 4.4.2 and supported by Wagner and Piccoli (2007) suggest, the Executive in this instance demonstrated his commitment to the project only when he realised the implementation of the FCS would have a direct impact on his own work.

Observation Notes	Memo
<b>FN27aJul11:14-15O.</b> Timothy had stated (the day before the appointment with Benjy) that Benjy could not find an important document whilst Daisy was away	This demonstrates the importance of having this new system - the executive could not retrieve an important document and could not ask his assistant for it as she was on leave. This restricts his access to documents and clearly demonstrates the current system is not easy to use.
<b>FN27aJul11:15-16O.</b> he was keen to get the structure sorted out so he could find things.	He is now motivated to get on with implementing the new system so that he does not have issues with finding documents. This new system would enable easier retrieval of documents.
<b>FN27aJul11:21-23O.</b> He assured me that when she returned from her unexpected leave that she would make herself available to me for this project.	He has agreed that the user will make herself available to me and will begin participating in this project. He recognises that she must stop resisting this.

### ***Other Organisational Changes***

Just as in previous phases of this action research study, other organisational changes were taking place in parallel with this phase of the project. During a senior administrative group meeting it was announced that a new e-Recruit system was being implemented and staff would need to undertake training to use it. As a consequence of discussions with the Project Sponsor throughout the project it became apparent that each area within the organisation could implement its own software solution (for example Human Resources and Finance are responsible for their own systems implementations, software updates and training of end users): there was no coordinated approach to the management of implementing systems across the organisation, leading to end users undergoing continual multiple changes within the organisation from a variety of sources – each of which was managed differently.

Observation Notes	Memo
<b>FN27Jul11:7-8O.</b> Enid then discusses the new e-Recruit system and training that needs to be undertaken. All its new features etc.	Yet another change within the organisation, not only are we implementing a new system another software system is being implemented as well. There is no communication with regards to new systems being implemented, their timing and impact on any other projects and affected staff within the organisation.
<b>FN27Jul11:8-10O.</b> I wonder what Timothy thinks about all of this and if he knows what Enid does with implementing new HR systems	See above - there is no central point for systems implementations within the organisation.
<b>FN27Jul11:10O.</b> and how does that fit in with the overall organisational plan and other systems.	See 7-8 above there is no overall coordinated organisational plan for all applications including new and upgrades etc. HR have decided this is needed now and have decided to implement it now with no real thought to other changes underway and impact on staff. HR are doing this implementation and I wonder how their project management and change management skills are.
<b>FN27Jul11:11-12O.</b> What the impact if any that has on this project and where the recruitment documents are stored.	As above and there is no consideration with regards to the current project and how these two systems might integrate - in terms of recruitment document storage and retrieval.

I discussed the new e-Recruit system with the Project Sponsor who agreed there was, in fact, no coordinated approach to systems implementation within the organisation. It was anticipated, however, that with the restructure (which occurred during the previous action research phase) and the establishment of the new Information and Knowledge Management unit this issue could be resolved by having one central point for the management and coordination of systems implementation projects, including one overarching project management approach.

As a consequence of this study (and because I was an employee at UC) I developed this new project management approach within the organisation, gave senior staff basic project management training; and provided a range of project templates which were used throughout the organisation for most projects.

### 7.5.2 Survey Results

A reliability assessment was conducted on the pilot survey results (eight participants as outlined in Section 7.4.2) checking for internal consistency using Cronbach's alpha as outlined in Section 4.4.2.

Table 7-7 lists the reliability for the constructs and variables ranging from 0.561 – 0.930. While two individual variables (safety and importance of change) were below the commonly accepted level of 0.70 (De Vaus, 2002), when combined with the other variables in their respective construct, the overall result exceeds the commonly accepted level – which is consistent with the previously validated scales and measures used.

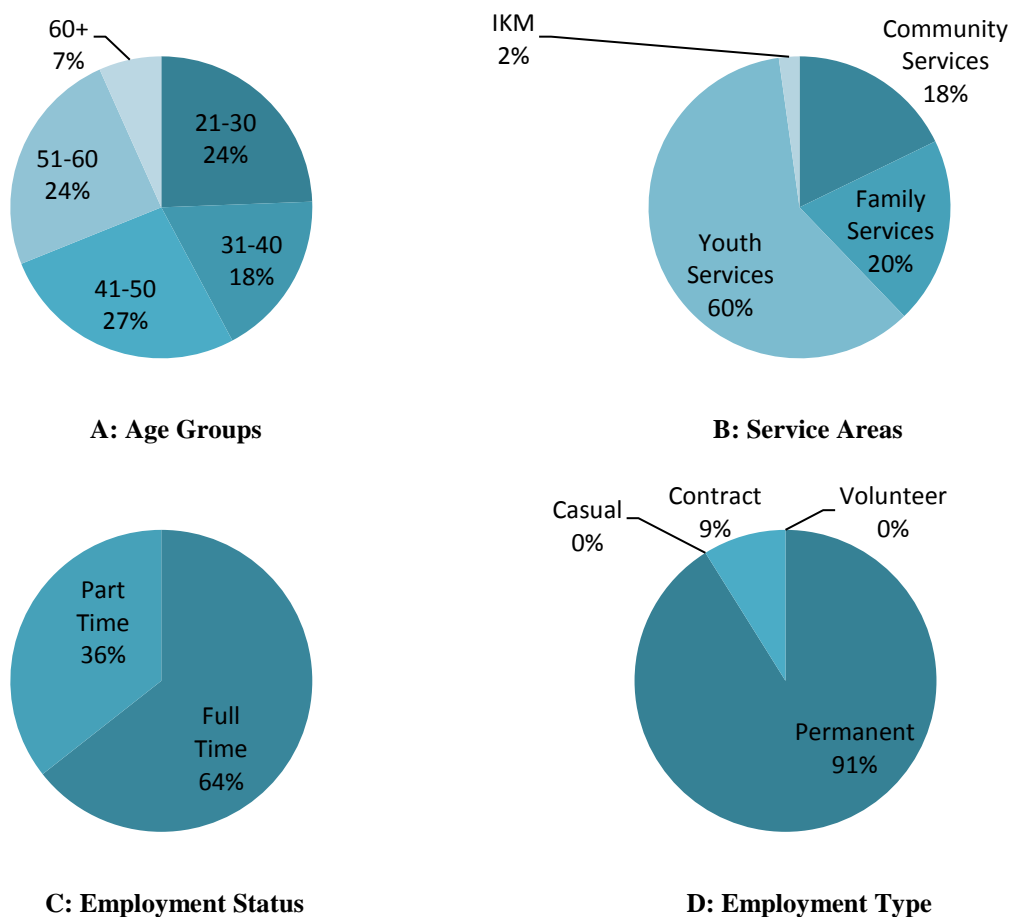
**Table 7-7: Reliability**

Constructs	Variables	Items	Cronbach's alpha
<b>Basic Needs Satisfaction</b>			<b>.924</b>
	Safety	Safe1-Safe4	.561
	Relatedness	Rel1-Rel8	.825
	Esteem	Est1-Est6	.861
	Autonomy	Aut1-Aut7	.890
<b>Interventions</b>			<b>.930</b>
	Importance of Change	Ichg1-Ichg2	.583
	Meaningful Rationale	Mrat1-Mrat4	.847
	Acknowledging Feelings and Perspectives	Apf1 – Apf2	.878
	Respectful and Concerned	Recon1-Recon5	.858
<b>Types of Motivation</b>	Amotivation (pressure & tension)	Amot1-Amot4	.852
	Autonomous Motivation (Interest/Enjoyment)	Autie1-Autie3	.892
	Autonomous Motivation (Perceived Choice)	Autpc1-Autpc7	.920
<b>Perceived Use and Perceived Ease of Use</b>	Perceived Usefulness	PU1- PU4	.938
	Perceived Ease of Use	Peou1 - Peou4	.858
<b>Behavioural Intention</b>	Acceptance	Acc1- Acc5	.788
	Persistence	Per1 – Per2	.787
	Resistance	Res1-Res5	.837

Empirical data were collected from a number of service areas in which the new CMS had been implemented. An email inviting staff to participate in the survey anonymously (see Appendix 6) was sent to 180 staff members on 24<sup>th</sup> August 2012 and a reminder email was sent to all staff on the 3<sup>rd</sup> September 2012. By the 10<sup>th</sup> September only 48 responses had been received, however, so the survey was extended to the 12<sup>th</sup> September. A total of 52 (25% response rate) responses were received, of which 45 were valid for review.

This survey had a number of limitations, including sample size and response rate. The survey was limited to those service areas where the CMS had been implemented, rather than the entire organisation; and it related specifically to the CMS (rather than to the implementation of the electronic FCS) because the CMS had just been implemented and was still fresh in users' minds – whereas the FCS had been implemented across the whole organisation over a number of years and I was concerned users would not remember how the implementation process had been managed in their area. These limitations meant that the sample size was small and the response rate was relatively low, so that the results can only be considered indicative and it is not appropriate to draw formal conclusions from the data analysis presented below. However, the results are clearly supportive of the project findings and indicate that mistakes were avoided during the qualitative phase.

The sample consisted of 29 males (64.4%) and 16 females (35.6%). Most respondents were from Youth Services (60%) with a job category of Counselling and/or Casework (55.6%). Overall, the survey group was representative of the organisation as a whole. Demographics are presented in Figure 7-3 and Table 7-8.



**Figure 7-3: Demographic Distribution**

Table 7-8 lists the rest of the respondent's demographic information.

**Table 7-8: Demographic Information**

Demographic Variable		Total N	Percentage
Education	High School Certificate or Less	1	2.2%
	Certificate/Trade Certificate	8	17.8%
	Undergraduate Diploma	7	15.6%
	Bachelor's Degree	8	17.8%
	Postgraduate Certificate or Diploma	13	28.9%
	Master's Degree or Higher	8	17.8%
Job Category	Community Care/Community Services	7	15.6%
	Counselling and/or Casework	25	55.6%
	Aged Care Worker	0	0%
	Administrative and/or other Support Worker	8	17.8%
	Manager	4	8.9%
	Senior Manager	1	2.2%
Worked in Organisation	Under 1 year	9	20%
	1-2 years	11	24.5%
	3-5 years	16	35.6%
	6-10 years	4	8.9%
	11-15 years	2	4.4%
	16-20 years	2	4.4%
	Over 20 years	1	2.2%

The findings of the rest of the survey are presented below, based on the propositions as outlined in Section 7.4.2 SPSS® Statistics 22 was used for the analysis (see Appendix 8). Nominal scales were utilised for non-ordered values such as gender and ordinal values were used for all other values therefore the Pearson product-moment correlation coefficient was selected for further analysis of the ordinal values. The following calculations were used to total the scores for each concept in order to complete the analysis:

- Total Needs Satisfaction (Total Basic Needs Satisfaction) was calculated by adding together all the items from the Safety; Relatedness; Esteem; and Autonomy variables. The higher the score, the more likely that needs were being satisfied;
- Total Type of Motivation (Total Motivation) was calculated by adding together all the items from the Autonomous Motivation (Interest/Enjoyment) and Autonomous Motivation (Perceived Choice), then subtracting the total of the items from the Amotivation (Pressure & Tension) variables to give an overall total for motivation. The higher the score, the more likely autonomous motivation was being displayed (see for example Ryan et. al. 1991); and
- Total of Autonomous Interventions (Total Interventions) was calculated by adding together all the items from the Importance of Change; Meaningful Rationale; Acknowledging Feelings and Perspectives; and being Respectful and Concerned variables to give an overall total for how autonomously supportive the interventions were. The higher the score, the more autonomously supportive the interventions were.

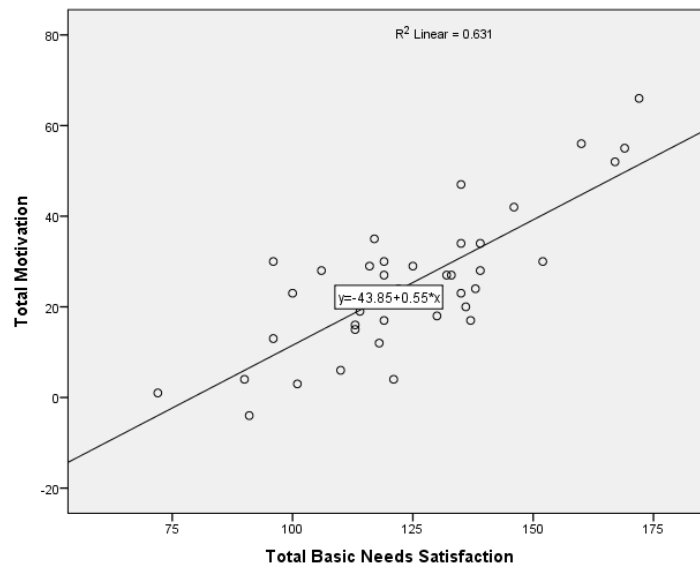
As recommended by Pallant (2011) scatterplots were completed for each proposition, prior to calculating correlations to obtain an impression of whether the variables were related and to determine the direction of the relationship/s between the variables. Since scatterplots are only designed to give a general indication of the strength of the relationship between variables, the Pearson product-moment correlation coefficient was then calculated to “provide a numerical summary of the direction and strength of the linear relationship between the two variables” (Pallant, 2011, p. 123). A perfect correlation is -1.00 or 1.00 when determining the strength of the relationship between the two variables. When reviewing the results outlined below, therefore, keep in mind that they have been interpreted using guidelines suggested in Pallant, (2011) and Field (2013) that a:

- Small association:  $r = .10$  to  $.29$ ;
- Medium association:  $r = .30$  to  $.49$ ; and
- Large association:  $r = .50$  to  $.1.0$ .

The propositions and their results are shown below.

**P1:** If overall a user’s needs are satisfied this will have a positive influence on the display of a more autonomous type of motivation.

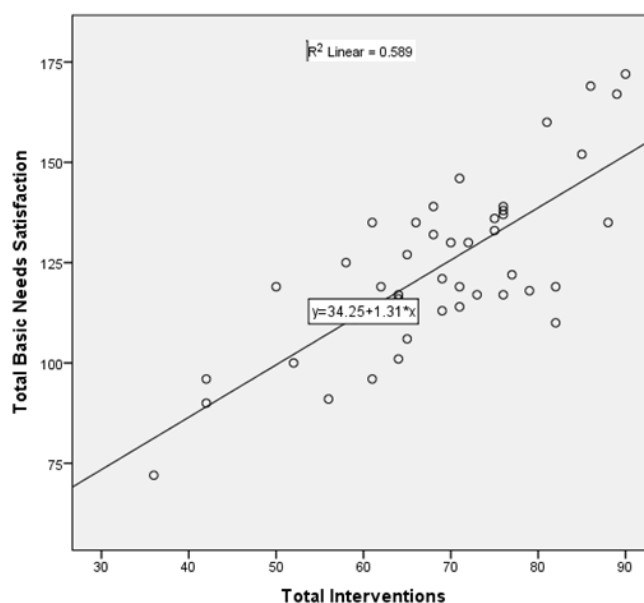
Figure 7-4 indicates there is a positive association between total basic needs satisfaction and an autonomous type of motivation. The results of the Pearson product-moment correlation coefficient confirmed there was a large positive (above .50) association between the two variables,  $r = .795$ ,  $N = 45$ ,  $p < .001$  with higher levels of needs satisfaction associated with higher levels of autonomous motivation.



**Figure 7-4: P1 Scatterplot – Needs & Motivation**

**P2:** Autonomously supportive interventions will have a positive influence on needs satisfaction.

Figure 7-5 indicates a positive association between total autonomously supportive interventions and basic needs satisfaction as there is a general trend in data shown by the line. The results of the Pearson product-moment correlation coefficient confirmed there was a large positive association between the two variables,  $r = .767$ ,  $N = 45$ ,  $p < .001$  with higher levels of autonomously supportive interventions associated with higher levels of needs satisfaction.

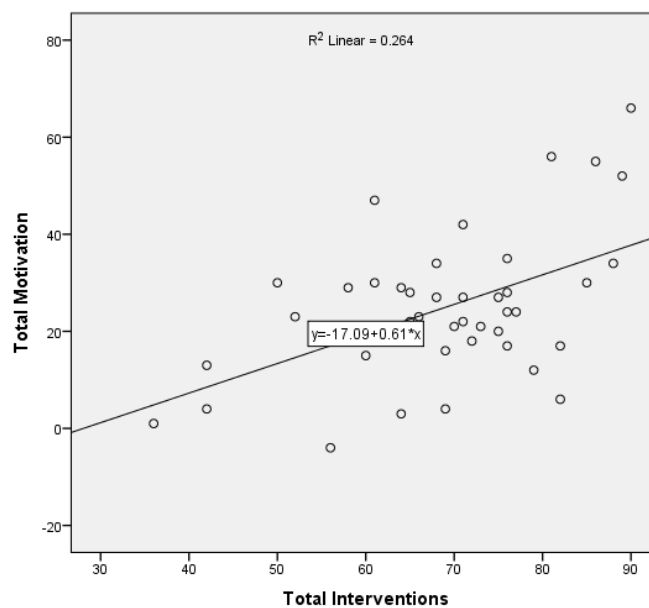


**Figure 7-5: P2 Scatterplot – Interventions & Needs**

It was also expected the autonomously supportive interventions would lead to internalisation of the change process and users would display an autonomous type of motivation to accept the change (see P3 below).

**P3:** Autonomously supportive interventions will have a positive influence on an autonomous type of motivation being displayed.

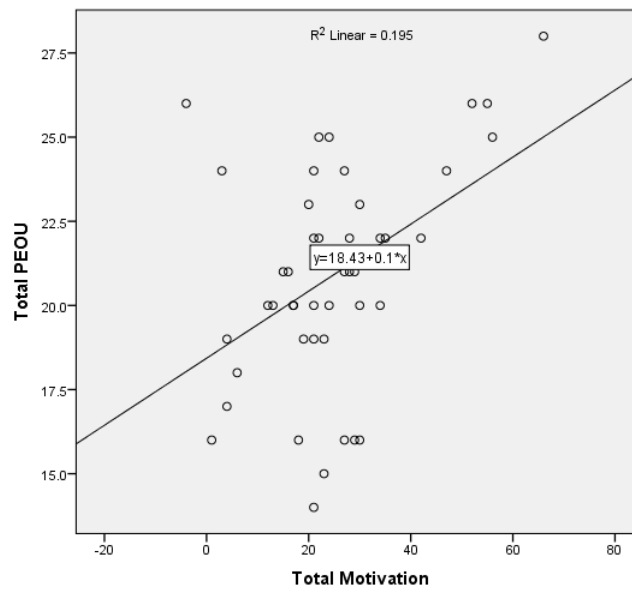
Figure 7-6 indicates a positive association between the total of the autonomously supportive interventions and an autonomous type of motivation being displayed. The results of the Pearson product-moment correlation coefficient (using the guidelines above) confirmed there was just over a large positive association between the two variables,  $r = .514$ ,  $N = 45$ ,  $p < .001$  with higher levels of autonomously supportive interventions associated with higher levels of autonomous type of motivation.



**Figure 7-6: P3 Scatterplot – Interventions & Motivation**

**P4:** Autonomous motivation will have a positive influence on perceived ease of use.

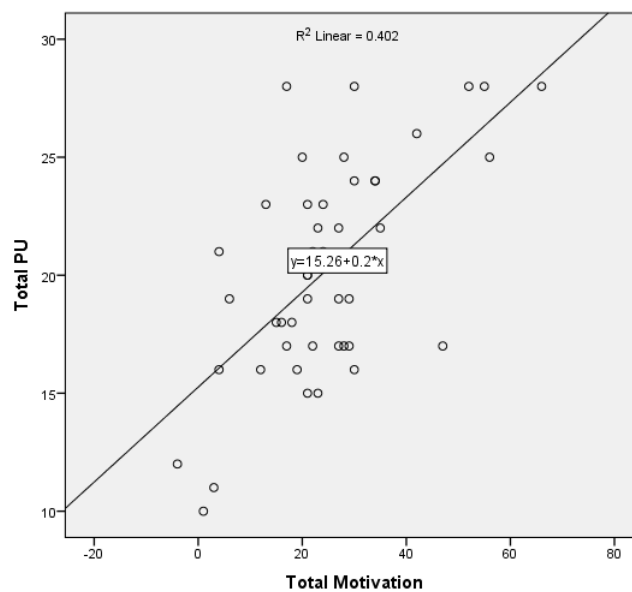
Figure 7-7 indicates a positive association between an autonomous type of motivation and perceived ease of use (PEOU). The results of the Pearson product-moment correlation coefficient indicated a medium positive association between the two variables,  $r = .441$ ,  $N = 45$ ,  $p < .002$  with higher levels of autonomous motivation being displayed associated with higher levels of perceived ease of use.



**Figure 7-7: P4 Scatterplot - Motivation and PEOU**

**P5:** Autonomous motivation will have a positive influence on perceived usefulness.

Figure 7-8 indicates there is a positive association between an autonomous type of motivation and perceived usefulness (PU). The results of the Pearson product-moment correlation coefficient confirmed there was a large positive association between the two variables,  $r = .634$ ,  $N = 45$ ,  $p < .001$  with higher levels of autonomous motivation being displayed associated with higher levels of perceived usefulness .



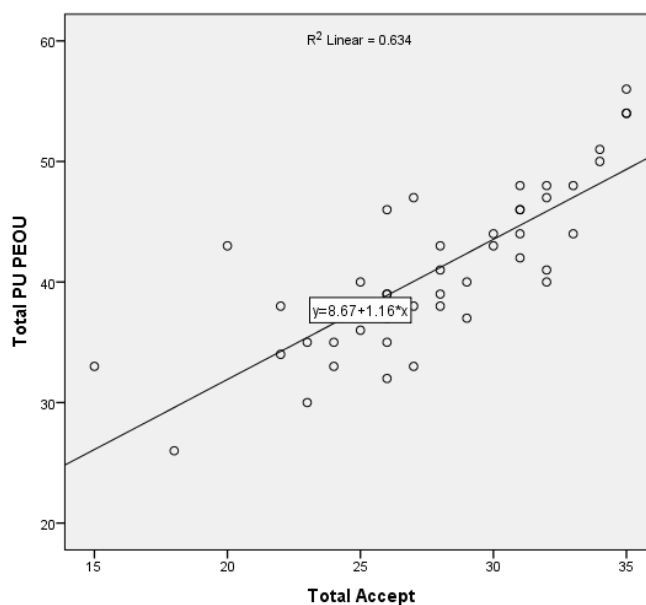
**Figure 7-8: P5 Scatterplot – Motivation & PU**



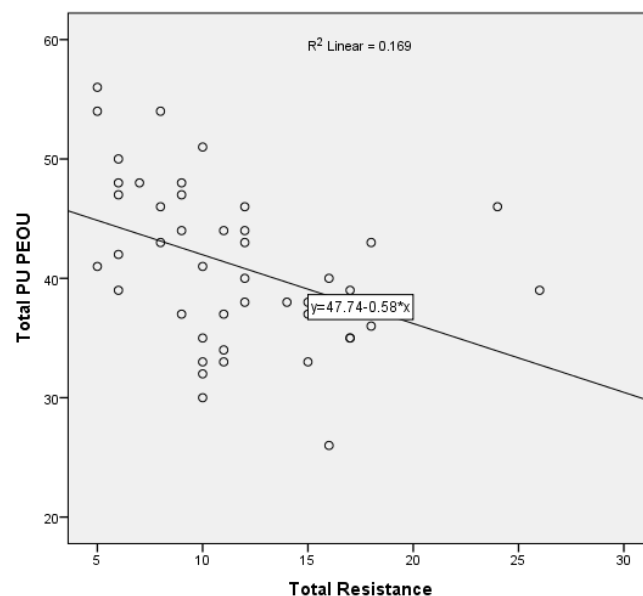
**P6:** Behavioural intention will be moderated by perceived usefulness and perceived ease of use.

Two scatterplots were completed for proposition 6, showing the association between the total of the Perceived Usefulness (PU) and Perceived Ease of Use (PEOU) variables and (in the first instance) acceptance behavioural intention and (secondly) resistance behaviour intention. Figure 7-9 indicates a positive association between the combined PU and PEOU and the acceptance behaviour and, as expected, Figure 7-10 indicates a negative association between PU and PEOU and the resistance behavioural intention.

The results of the Pearson product-moment correlation coefficient confirmed the large positive association between combined PU and PEOU and acceptance variables,  $r = .796$ ,  $N = 45$ ,  $p < .001$  with higher levels of acceptance behavioural intention associated with high levels of perceived usefulness and perceived ease of use.

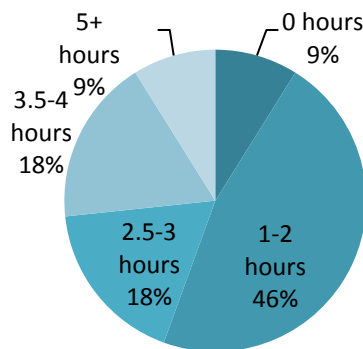


**Figure 7-9: P6 Scatterplot – Acceptance & Total PU/PEOU**

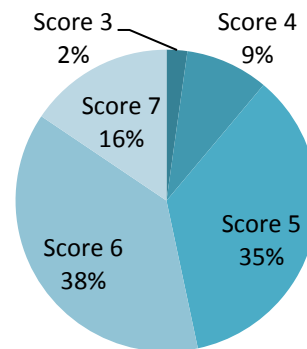


**Figure 7-10: Scatterplot - Resistance & Total PU/PEOU**

Actual behaviour was measured by asking the respondents on average how much time they spent using the system in hours and minutes each work day. 46% said they use the system 1-2 hours each day, whilst 9% said they use it on average 5 or more hours per day (refer to Figure 7-11) When compared with the acceptance scores from the survey (see Figure 7.12) where 7 is the highest value and 1 is the lowest an overall total of 89% of users scored on average (across five items) 5 or above to indicate they accepted the new system (no one scored below 3) and an overall total of 91% of users actually use the system. Together these measures demonstrate overall acceptance and use of the system within the group surveyed.



**Figure 7-11: Use**



**Figure 7-12: Acceptance**

### 7.5.3 Survey Findings Discussion

The survey was conducted following the implementation of a CMS which was used to capture, store and report data on client service programs that the organisation offered to the community, most of which are government funded. Although the CMS was useful for organisational reporting, it was mainly introduced to meet the government reporting requirements and, as a result, most survey respondents had a job category of counselling and/or casework as they were the principal users of the system.

91% of staff was employed full time, with the majority having worked in the organisation for 3-5 years (35.6%) and just 19.9% having worked there for more than six years. The relatively short term of employment (3-5 years) for the majority of respondents may be attributed to the “short term nature of many funding arrangements” (Productivity Commission, 2010, p.267) or, also as result of NPM practices, the increasing demands of greater professionalisation and increased bureaucracy (Productivity Commission, 2010; Kramer, 2000) which are leading to high staff turnover levels.

Overall, the survey results indicate positive associations with basic needs satisfaction; autonomous interventions and autonomous motivation (see P1, P2 and P3 results). While the correlation co-efficient used in this study cannot provide an indication of the direction of the causality, it can be concluded that if a user’s needs are satisfied, their motivation appears to be autonomous (or vice versa). Similarly, if the interventions are perceived as autonomously supportive this appears to influence need satisfaction and motivation.

As outlined in Section 3.3, motivation is driven by many needs both intrinsic and extrinsic to the person. I have created conditions through implementation processes for people to satisfy their needs, which appear to have had an influence on need satisfaction and which, in turn, has resulted in an autonomous type of motivation, suggesting it is possible for an external intervention to have a positive effect on intrinsic needs. The results from this study support the findings of Deci et al. (2001) who demonstrated perceived autonomy support (from managers) facilitated satisfaction of the basic needs of competence, autonomy and relatedness which, in turn, promoted work engagement and psychological well-being within respondents.

In the MTAM it is possible to apply any type any type of intervention with regard to technology acceptance and/or organisational change. It would, for example, be interesting to apply controlling interventions in future studies and see if this thwarted need satisfaction and led to a controlled type of motivation (confirming crowding-out) being displayed; and what effect this might have on PU and PEOU.

As discussed in Chapter 3. , Soliman and Lapointe (2009) incorporated the hierarchy of needs with perceived usefulness (PU) from the Technology Acceptance Model to demonstrate that an innovation will be perceived as useful if it can be seen to meet a user's salient motivational needs. This study appears to support these authors' argument as there was a high association between autonomous motivation and PU and only a medium association between autonomous motivation and PEOU. This suggests that PU may be more important to end users than PEOU; and it may also be possible that a user who scores a high PU may also obtain a higher PEOU. While this relationship was not tested in the present study, it could be tested in future studies specifically relating to motivation.

As expected, PU and PEOU both had a positive influence on behavioural intention, supporting the large amount of empirical evidence that already exists (see Section 7.4.2). In this study behavioural intention was measured using the acceptance, persistence and resistance variables. The average scores (out of 7 - with 7 being the highest) for acceptance across the group was 5.6; persistence was 6.2 and resistance was just 2.3, indicating a high response rate for both acceptance and persistence behaviour – and this was supported by a total of 91% actually using the system as outlined in Section 7.5.2. See Table 7-9 for a summary of the propositions tested and the outcome.

**Table 7-9: Propositions**

<b>Proposition</b>	<b>Outcome</b>
P1: If overall the user's needs are satisfied then this will have a positive influence on a more autonomous type of motivation being displayed.	Supported
P2: Autonomously supportive interventions will have a positive influence on needs satisfaction.	Supported
P3: Autonomously supportive interventions will have a positive influence on an autonomous type of motivation being displayed.	Supported
P4: Autonomous motivation will have a positive influence on perceived usefulness.	Supported
P5: Autonomous motivation will have a positive influence on perceived ease of use.	Supported
P6: Behavioural intention will be moderated by perceived usefulness and perceived ease of use.	Supported

## 7.6 Chapter Summary

The Motivational Technology Acceptance Model (Figure 7-1) has been used to guide Phase Three of the action research and, additionally, a survey was developed and applied to test these findings. The sections in this chapter cover both the qualitative activities of Phase Three, as well as the descriptive quantitative approach, discussed in the survey results sections (7.5.2 and 7.5.3). The interventions which had been introduced in Phase Two of the action research study continued to be implemented where possible; and were expanded upon:

- Following the project plan and using it to ensure tasks are completed and, if possible, completed on time. For example, completing the policy and procedures and implementation in the remaining / overlooked service areas;
- More clearly defining the roles and responsibilities of the project team;
- Continuing to increase the competency of current project staff; and
- Updating project information for the organisation regularly.

The result of testing a number of propositions to support the MTAM suggests that these interventions have a positive association, an impact and/or are of significant importance in facilitating basic needs satisfaction and more autonomous motivation leading to acceptance behaviour (see Table 7-9). It also appears that the more autonomous the motivation, the more positive the association between perceived usefulness, in particular and perceive ease of use – resulting in a positive association with behavioural intention and use.

The limitations of the survey have been outlined: they include the small sample size and the relatively low response rate, which indicated it was inappropriate to draw any formal conclusions from the data analysis presented – though the findings do indicate that the qualitative phase did not include any major errors.

In this study I was specifically trying to understand whether an external intervention (in this case the way in which the change process is managed) affects a worker's intrinsic motivation and acceptance behaviour, using Motivation Crowding Theory and Self Determination Theory in relation to technology acceptance. I have focussed on the motivational continuum rather than focussing strictly on intrinsic motivation; and have considered the relationship which exists between external interventions, motivation and the resulting behaviour by incorporating TAM into this model which, as Frey (1994; 2001) has suggested, the social sciences have not previously considered.

The third question of this research study was: *Can we develop, test and refine an autonomously supportive organisational change implementation strategy to reduce the crowding out effect of intrinsically motivated staff in an organisation?* The outcomes of the action research phase, combined with the survey findings, suggest this is possible. I have used commonly recommended change and project management techniques and applied a ‘people’ approach to change, as opposed to a mechanistic approach. However, the key is not about what specific interventions are used but whether they are used in an autonomously supportive way by promoting the importance of undertaking the change; by provision of a meaningful rationale; through acknowledging the feelings and perspectives of staff undertaking the change and by being respectful and concerned.

## **Chapter 8. Conclusions**

The empirical component of this study has comprised three cycles of action research plus a survey, as presented in Chapters 5, 6 and 7. The present chapter provides a summary of the research project, outlining the overall findings, and discussion, as well as identifying the contributions, limitations and recommendations for future research.

The key objective of this research project was to identify and apply change and project management interventions in an autonomously supportive way to support non-profit staff (who are typically more intrinsically motivated) during an ICT-induced organisational change event. This has led to the development of an autonomously-supportive organisation change implementation strategy (suited not only to the non-profit sector but which may also be applied across the public and education sectors) as well as the Motivational Technology Acceptance Model which was used to test this strategy.

### **8.1 Summary**

This section provides a summary of the conditions that led to this research project, which provides context for the research questions presented in section 8.2. As Chapter 2. discussed in detail, it has been argued that for non-profit organisations (NPOs) change has been brought about by public sector reforms with the introduction of new public management (NPM) practices to the government sector and the outsourcing of social services through a competitive tendering process which shifted governmental accountability to NPOs. As a result, NPOs have had to become more institutionalised, professionalised and bureaucratic – and these structural alterations have, in turn, led to widespread changes in the NPO sector. Many organisations have been forced to develop and expand their ICT capacity in order to gather the data needed to meet government reporting obligations, but ICT-induced organisational change within NPOs has proved problematic and many NPOs are struggling to adopt and make effective use of ICT.

NPOs typically have a more intrinsically motivated workforce than public and private sector organisations, which provides unique challenges when attempting to change and implement new information systems. It was important that barriers to change and ICT acceptance, (such as employee resistance) be managed in such a way that the intrinsic motivation of staff, clients, volunteers and other stakeholders is preserved to ensure success in any change project. Motivation Crowding Theory (MCT) was therefore introduced as a framework for this study.

Frey and Jengen (2001) used the term “crowding-out” to describe the following effect: if people perceive external influences via rewards or regulations are controlling them, these external influences will tend to *crowd-out* their intrinsic motivation. Two requirements are needed for crowding-out to occur: a sufficiently high intrinsic work motivation must exist at the outset; and “conditions for crowding out intrinsic work motivation must be present” (Frey, 1997, p. 431). In this study I have shown that NPOs tend to have a highly intrinsically-motivated workforce, which led to the assumption that the intrinsic work motivation within the industry partner organisation (Uniting Communities) was sufficiently high; and the conditions for crowding-out work motivation were present in the form of changes currently occurring in the non-profit sector brought about by NPM practices.

## 8.2 Findings

The three main themes of: autonomous (including intrinsic) motivation, attitudes to organisational change; and attitudes to ICT and its acceptance have been explored and were used as the basis of this study. The three main research questions driving this research were:

1. What is technology acceptance and how important is motivation for technology acceptance?
2. What is motivation and how does organisational change affect it?
3. What change management interventions are autonomously supportive and are these likely to result in increased acceptance of an ICT-induced organisational change?

Questions 1 and 2 were answered in Chapter 3. by means of the synthesis and interpretation of the literature from the management, economics, and psychology and information systems fields, as illustrated in more detail below.

Research question one (1) *What is technology acceptance and how important is motivation for technology acceptance* was answered by combining the seemingly disparate research streams of ICT adoption and acceptance with ICT implementation project and ICT-induced organisational change. It was found that the terms adoption, acceptance and use were used as proxies for each other, even though they have different meanings as outlined in Chapter 3. In this study the technology acceptance, encompassed individual adoption and usage. It was argued that motivation plays an important role in the acceptance of an ICT-induced organisational change, as first demonstrated in a review of the TAM literature. However, the concept of motivation in the acceptance research stream was shown to be overly simplistic, because the literature failed to recognise the fundamental needs underlying behaviour. In this thesis the motivation concept has been redefined by comparing the TAM variables to the Basic Needs (which underlie all behaviour) and redefining motivation in this way represents a significant contribution of this research to the IS field.

Research question two (2) *What is motivation and how does organisational change affect it* was answered more fully in Section 3.3, by focussing on the Organismic (Need) theories from the Psychology field. Basically, motivation is a complex concept driven by many needs and desires (Ambrose and Kulik 1999) which originate both from within a person (intrinsic motivation) and from external influences (extrinsic motivators). The organismic theories were used as a basis for understanding motivation, and evidence was provided to support the assertions that:

- needs are universal and underlie motivation which impels behaviour;
- we cannot directly motivate a person to satisfy his/her needs, we only create conditions to help individuals satisfy their needs;
- the types of motivation (intrinsic and extrinsic) using the motivational continuum as set out in Self Determination Theory (SDT) were relevant to this study; and
- the undermining effect or crowding-out (MCT) of intrinsic motivation was relevant to this research project.

Section 3.6 provides an overview demonstrating that organisational change does affect motivation. MCT was used in this study as a basis for understanding and measuring the effects of organisational change. Although MCT has been discussed in both organisational settings and in voluntary areas, it has not previously been used in this way, particularly in the non-profit sector; nor. This research project therefore provides new theoretical and practical contributions in both these areas.

Research question (3) *What change management interventions are autonomously supportive and are these likely to result in increased acceptance of an ICT-induced organisational change* had to be reframed based on the findings from Chapter 3, where it was argued that:

- Understanding both ICT acceptance and the importance of motivation to accept ICT and its associated organisational change are an essential pre-requisite for the use of autonomously-supportive techniques which have the potential to reduce the crowding-out effect; and
- Combining change and management models and theories together with motivation theories can result in a more participative management approach for leading change, as demonstrated by Theory Y.

There was no third party case study in existence to explore the problem situation and to test and refine this approach in the field. The only effective solution was, therefore, to adopt an interventionist approach to the problem situation. Thus Question 3 was re-phrased so as to focus on the problem situation:

4. *Can we develop, test and refine an autonomously-supportive organisational change implementation strategy to reduce the crowding-out effect of intrinsically motivated staff in an organisation?*



The outcomes of the action research phases, combined with the survey findings, suggest it is possible to create an autonomously-supportive organisational change implementation strategy. I have used commonly recommended change and project management techniques and applied a ‘people’ approach to change, as opposed to a mechanistic approach during this study, which is discussed in more detail below.

The Partner Organisation in this study (Uniting Communities) is a large NPO which was experiencing the issues outlined above in implementing an ICT-induced organisational change as a result of NPM practices and competitive tendering processes while endeavouring to maintain the motivation of its intrinsically motivated workforce. As stated in Chapter 5. , the issue is not that traditional project management practices don’t work in NPOs but, rather, that there appears to be a lack of professionalism in applying these practices appropriately as this relates to NPOs’ more intrinsically motivated staff. Although not all business processes from the private or public sector are suitable for NPOs, project management practices tailored to this sector are suitable, though at times during this action research study these appeared to be difficult to implement as management holds a weaker authority bond over non-profit workers (refer to Chapter 2. for more details). NPOs are different from other organisations because of the participatory, inclusive, and accessible processes they use and these processes are an important motivating factor for non-profit workers. It was these processes which were used in this study.

In this research project, the implementation of the electronic functional classification scheme (FCS) to manage the storage and retrieval of electronic documents more effectively (in part as a requirement of NPM practices) within UC did have the potential (and in some cases actually did) crowd-out the intrinsic motivation of not only the end users but also the project implementation team, because both groups of people perceived the new system and its corresponding procedural changes to be controlling.

In this thesis I have shown that interventions (applied in an autonomously supportive way) do have the ability to promote internalisation of the change process according to the Motivational Continuum (see Chapters 3 and 5). This has led to the use of autonomous motivation when accepting change and thus reducing the potential crowding-out effect which may have been (and was) caused when implementing the new system. The next section provides a discussion integrating the finding from the empirical chapters.

### **8.3 Discussion**

The results of the action research study were analysed and presented in the empirical Chapters 5, 6 and 7, which resulted in the development of a new Motivational Technology Acceptance Model (MTAM). A survey was developed to test this model and the results were analysed and discussed in Chapter 7. This section is a discussion of the integration of the findings from the action research study and survey and demonstrates that the mixed method research design was appropriate for this study.

### **8.3.1 Mixed Method**

As outlined in Chapter 4 the mixed method research design was selected for this study based on the theoretical findings from the literature and learning experiences gained from the pilot project, where the focus was on the mutual interaction between the change itself and the subsequent motivation of the workforce. The mixed method approach aligned to the overall objective of the research project, which was to identify and apply interventions to reduce the likely crowding-out effects during an ICT-induced organisational change, using Motivation Crowding Theory (MCT) as the framework.

The three main themes of autonomous motivation (using the motivational continuum); attitudes to organisational change; and attitudes to ICT and its acceptance (TAM), formed the basis of this study. As I have provided a novel theoretical perspective in the context of ICT acceptance, the sequential mixed method design strategy was appropriate, (as outlined in Chapter 4) in which qualitative data, which was collected in the action research phases, was used to inform the quantitative data collection phase. The data collected (via, observation, interviews etc.) in the qualitative phase was analysed using the open coding technique associated with grounded theory (as extensively documented in the empirical chapters) and the quantitative data (survey) were analysed using well-established statistical tools, as outlined in Chapter 7.

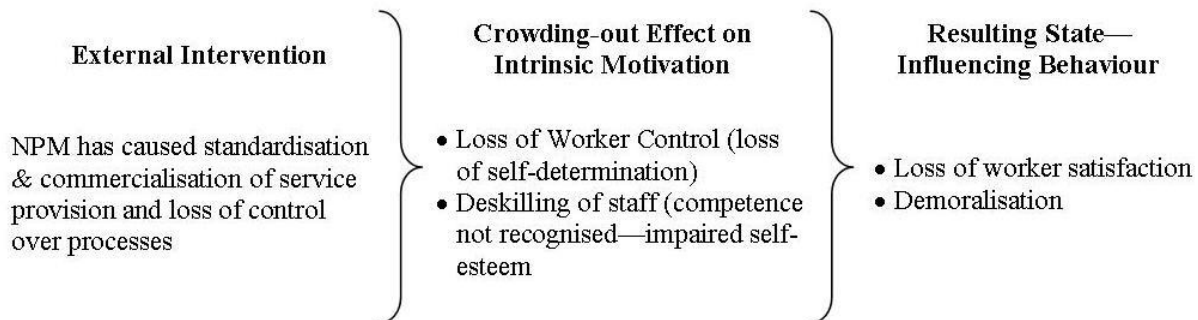
Following Venkatesh et al. (2013, p.26), using the mixed method approach served a developmental purpose, whereby “a qualitative study was used to develop constructs and hypotheses and a quantitative study was used to test the hypotheses”. In this thesis the qualitative study was used to develop the MTAM and a set of propositions, and finally, a survey was developed to test those propositions. Conducting the research study in this way allowed me to develop constructs and relationships, and a survey was used to validate these relationships, which adds a “richness to the overall study” (Venkatesh et al., 2013, p. 38), and allows me to provide stronger, more accurate, inferences, which cannot be achieved using any other approach. Below is an integration of the findings from both the action research and the survey strands of this study, enabling the provision of an holistic view of the research project.

### **8.3.2 Integration of Findings**

As outlined in the empirical chapters (5, 6, 7) I have used commonly recommended change and project management intervention techniques in an autonomously supportive way. However, following the action research phases, it was discovered, the key is not which specific interventions are used, but whether they are used in an autonomously supportive way by promoting:

- The importance of undertaking the change;
- The provision of a meaningful rationale for undertaking the change and using the new system, which could be similar to TAM’s ‘perceived usefulness’;
- Acknowledgement of the feelings and perspectives of staff undergoing the change; and
- Respect and concern for end users, particularly those finding it difficult to accept the change and the system being implemented.

Using interventions in an autonomously supportive way ensured that the crowding-out effect, caused by an ICT-induced organisational change was minimised, leading to persistence and acceptance of technology and change. The journey to this finding began in Chapter 2, where NPM was used in the first instance, to demonstrate (via literature review) that MCT was an appropriate framework for demonstrating how external interventions (caused by NPM) crowds-out intrinsic motivation of non-profit workers resulting in a negative effect on behaviour, as demonstrated in Figure 8.1.

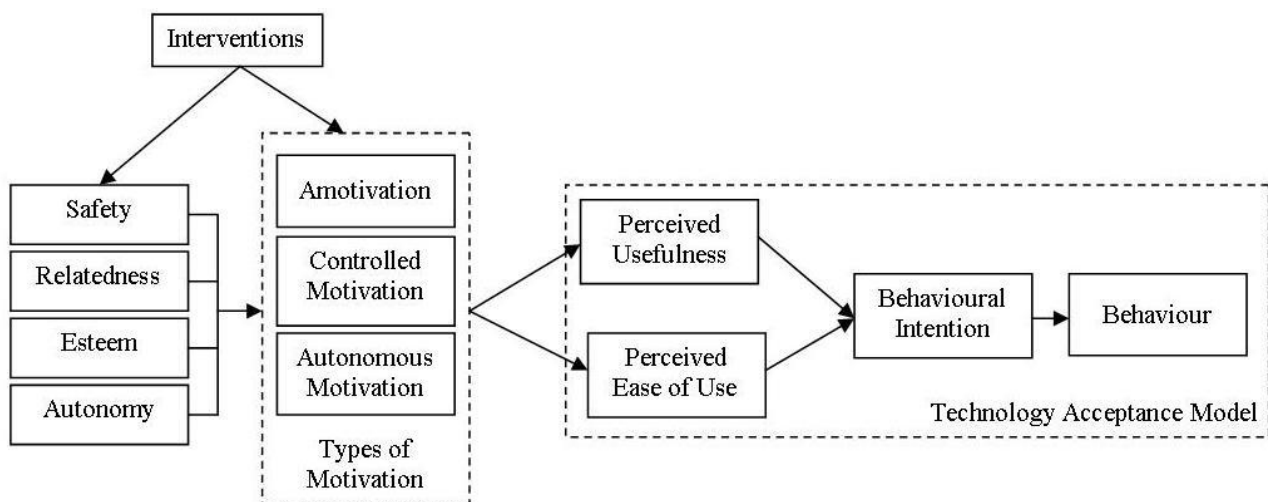


**Figure 8-1: MCT Framework Model using NPM as the external intervention**

The above framework model could be used in any instance where an external intervention is likely to crowd-out motivation. In this study, it was used in the action research phases to demonstrate how the external interventions (an identified set of key factors) could crowd-out worker motivation. The Change Factors and motivation crowding model was used to structure and analyse data collection in the qualitative study. The key factors were identified by analysing the data collected using an open coding technique associated with grounded theory which represents a significant contribution as outlined in section 8.3.

Following an extensive literature review, it was argued that needs underlie motivation, and that, rather than relying on purely intrinsic or extrinsic motivation to describe how a person might behave, the motivational continuum was presented to distinguish types of motivation, based on self-regulation. Using the motivational continuum provides a unique perspective; to consider acceptance behaviour in IS research, and organisational change, for example. The expanded understanding of the motivation concept could also be applied to social research in general. From this the Motivational Technology Acceptance Model (MTAM) (see Figure 8-22) was developed and used to guide the third phase of action research and survey development and testing, providing an additional contribution to both theory and practice.

In the third action research phase in particular, interventions were applied and types of motivation and resulting behaviours were observed and recorded. For example, it was surprising to find that the project officer displayed amotivation, when I was trying to re-implement the project plan (I had inadvertently crowded-out her previously autonomous motivation) as discussed in Section 6.5.2, however, once she was provided with a meaningful rationale (for example), her type of motivation to implement the system had changed to be more autonomous. As mentioned at the beginning of this section, regardless of the intervention being applied, it needs to be done in an autonomously supportive way, which is demonstrated in this instance, and throughout the action research phases, which is why ‘Intervention’ in the MTAM are represented as a generic concept.



**Figure 8-2: Motivational Technology Acceptance Model (MTAM)**

As outlined in Section 7.1 this model suggests that needs underlie all types of motivation and behaviour (as shown in the literature review in Chapter 3. ). When a user’s needs are satisfied via the use of implementation interventions, this promotes internalisation of the change process resulting in a more autonomous type of motivation being used, which has a positive impact on Perceived Use and Perceived Ease of Use thus reducing the likely crowding-out effect.

Perceived Usefulness (PU) and Perceived Ease of Use (PEOU) were redefined to more appropriately reflect the basic needs which underlie behaviour and the type of motivation being used for acceptance:

- Perceived Usefulness: The degree to which a person perceives the system will be useful based on the user’s autonomous motivation to use the system.
- Perceived Ease of Use: The degree to which a person believes that using a particular system would be free of effort based on the user’s autonomous motivation to use the system.
- formulated for testing.

The MTAM can be used for any type of acceptance model, for example, acceptance of organisational change, process changes etc., just as any intervention can be applied; any acceptance can also be applied to this model. The redefinition of PU and PEOU can also be used for other acceptance models as well, by substitution of the word 'system'. For example, if I wanted to measure the acceptance of a process change PU could be defined as "The degree to which a person perceives the 'process' to be useful base on the user's autonomous motivation to use the 'process'". The technology acceptance was specifically selected, as it was appropriate for this study.

Following the developmental purpose of this mixed method research study the qualitative study was used to develop the MTAM constructs and, more importantly, from the observations made, during the action research phases, propositions were developed to test the MTAM, as outlined in Section 7.4.2. In developing the survey it was necessary to clarify the concepts displayed in the MTAM to develop indicators as described in Section 7.4.2 as "descending the ladder of abstraction" (de Vaus, 2002, p.42). The constructs were operationalised and, where possible, existing indicators were used.

As outlined in Chapter 7. , the survey results (while not statistically significant) indicated support for the MTAM as it appeared the interventions were perceived as autonomously supportive and did have a positive association, impact or are of significant importance towards facilitating basic needs satisfaction and a more autonomous type of acceptance motivation. For example in Section 6.7 observation notes illustrated how two end users did not accept the new system, although using autonomously supportive techniques resulted in internalisation leading to a more integrated or identified type of self-regulation being used to accept (and in Stewart's case embrace) the change. It also appeared that the more autonomous the motivation, the more positive the association between PU and PEOU in terms of behavioural intention and use.

These notes illustrate how the two end users in question did not initially accept the new system, although using autonomously supportive techniques resulted in internalisation leading to a more integrated or identified type of self-regulation being used to accept (and in Stewart's case embrace) the change. Below is a sample of observations demonstrating resistance behaviour.

It is important to note that the needs, types of motivation and interventions presented in this model – as well as the new definitions of PU and PEOU – can also be retrofitted to any of the models used within the TAM family, such as UTAUT, and, as outlined above, for any acceptance model.

## **8.4 Contributions**

The research contributions of this study have both theoretical and practical implications which are not only applicable to the non-profit sector, but may also be applied to other sectors such as the education and public sectors whose staff also display intrinsically motivated behaviour.

These research findings will help in reducing long-term failure rates of any organisational change project, including an ICT-induced organisational change, because they provide a fuller understanding of the motivation concept and how it relates to the acceptance of change and the adoption and use of technology. This was achieved by combining the organisational change, ICT-induced organisational change, ICT implementation, ICT acceptance and adoption and motivation research fields.

As a result of this research NPOs, in particular, will be able to respond more effectively to the increasing pressures being placed on them to operate efficiently in an increasingly competitive context while maintaining their strategic advantage of having an intrinsically motivated workforce. Through a review of the literature, I have also contributed to the non-profit research stream by demonstrating how New Public Management practices have a crowding-out effect on non-profit worker motivation through using Motivation Crowding Theory as the framework for this study.

The action research study undertaken with Uniting Communities has generated valuable knowledge, not previously available, giving all these research fields and the non-profit sector a greater understanding of organisational change, ICT acceptance and its impact on the motivation of workers; and will generate further research in this important topic.

Grounded Theory was used to guide data collection, coding, and analysis throughout the study, rather than using it for its more common purpose of building a new theory, because Action Research alone does not offer a guide to data collection and analysis in the way grounded theory can. According to Corbin & Strauss, open coding is “the interpretive process by which data are broken down analytically” (Corbin & Strauss 1990 p. 12). Urquhart et al. (2010, p. 365) say that “because grounded theory has an emphasis on constructs and relationships, it is relatively easy to generate propositions relating to information systems phenomena that may – or may not – be testable”. In this study the process of using grounded theory for coding and analysis leading to the generation of propositions for testing (through the survey instrument) has been demonstrated as relevant to the information systems field. Thorough documentation of the use of grounded theory as a coding and analysis technique in this thesis is a significant contribution in and of itself – not only to the information systems field but to the social sciences field more generally as an appropriate guide for data collection and analysis in an action research study.

A deeper and more considered treatment of the motivation concept within the IS field used as the underlying factor to facilitate a greater acceptance of change and the technology being implemented provides still another contribution to theory. As Venkatesh et al. (2007) state it is time to “search for alternate theoretical mechanisms that drive the adoption and use of technology in organisations” and that “research focused on interventions, contingencies and alternative theoretical perspectives” is needed (Venkatesh et al. 2007, pp. 267-268): an outcome which this research project has endeavoured to produce. The development of MTAM and the redefinition of perceived usefulness and perceived ease of use to reflect the importance of the motivation concept more appropriately on technology acceptance, as this thesis has done can be used to generate further research.

While it has been recognised that implementation processes play an important role in technology acceptance, the implementation and acceptance research streams rarely overlap (Barki et al. 2008; Schaper and Pervan, 2005). This study has brought those two research streams together within the Information Systems field: the ICT implementation research stream (primarily based on innovation and diffusion literature (Cooper and Zmud, 1990; Lucas et al. 2007)) and the acceptance research stream. This has been achieved by looking outside the Information Systems (IS) discipline to the motivation, organisational change, management and non-profit research fields.

In effect I have created a unified theory by bringing together implementation processes (from the organisational change and management theories) and technology acceptance, which has practical implications for management when implementing new technology. Further, I have demonstrated that technology acceptance can be enhanced and sustained by drawing on the motivation literature and applying autonomously supportive interventions from the organisation change and management theories.

By focusing on the types of motivation using the motivational continuum from SDT, rather than focussing strictly on intrinsic motivation, I have been able to clarify and enhance the relationship which exists between external interventions, motivation and the resulting behaviour by incorporating TAM into this model – which, as Frey (1994; 2001) has suggested, the social sciences have not previously considered.

More broadly, by using commonly recommended change and project management techniques in an autonomously supportive way – that is, by promoting the importance of undertaking the change; by provision of a meaningful rationale; through acknowledging the feelings and perspectives of staff undertaking the change and by being respectful and concerned as outlined in this study, I have demonstrated that these factors can be applied to any change project, including ICT-induced organisation changes – not only within the non-profit sector but across other sectors including the education and public sectors.

## 8.5 Limitations

As Chapter 1. has noted, a number of limitations were placed on this study to reduce the scope of the research project to a manageable size:

- Motivation is defined and viewed only from an organismic (needs) point of view using this type of motivation theory to explain the direction of behaviour (Deci and Ryan, 1985; Latham, 2007). Needs may be defined “as innate, organismic necessities rather than acquired motives” (Deci and Ryan, 2000). As explained in Section 1.1.3, I have assumed people are active organisms – that is, where the organism is volitional and initiates its own behaviour (people have intrinsic needs and physiological drives) (Deci and Ryan, 1985; 2000). The assumption underlying these needs or organismic theories is that the stated needs are universal, in that they are found in all people (Deci and Ryan, 2008; Latham, 2007). According to Latham (2007) it is these needs which impel behaviour.
- The research is limited to the individuals’ and researcher’s perceptions and interpretations through observations, interviews and a survey instrument.
- The research is further limited to understanding only the motivations of workers to accept the change and system being implemented by investigating and controlling autonomously supportive variables.

This study is made up of three cycles of ‘snap-shots’ in time, during which I was embedded within the project team in a capacity similar to a conventional consultancy, from April 2010 through to August 2011 – finally being offered a full-time position with Uniting Communities, resulting in the survey being administered in September 2012. Burke (2002, p. 125) suggests that “the degree to which the researcher is directly involved makes a difference” to the outcome of the research, with the outcome that replication of this study may be difficult. Further, this research took place in a single NPO and was concerned with two specific events, the implementation of an electronic FCS and CMS over a period of time, which may make the findings, reported in this study inapplicable to other studies. For example, many differences such as the type of organisation and its employees, technology and/or change being implemented as well as other external factors may influence findings from other studies.

The survey also had limitations which must be considered and which include the small sample size and the relatively low response rate, so that it is not appropriate to draw any formal conclusions from the data analysis presented in Chapter 7. The survey itself was limited to only those service areas where the CMS had been implemented, rather than across the whole organisation. The survey specifically related to the CMS and not the implementation of the electronic FCS, because at that time the CMS had just been implemented and was still fresh in users’ minds, whereas the FCS had been implemented across the whole organisation over a number of years and I was concerned users would not remember how the implementation was managed in their area, as years had passed.



## **8.6 Future Research**

While this research has made significant contributions of both a theoretical and practical nature to the non-profit sector in terms of reducing the likely crowding-out effect brought about by an ICT-induced organisation change, it may also be applied to other sectors such as the education and public sectors whose staff also demonstrate intrinsically motivated behaviour in the workforce, leading to increased acceptance of the technology and change being implemented. This research, however, has the potential to be expanded in several areas as outlined below.

### **8.6.1 Other Settings**

This research could be expanded to include studies across other sectors, as mentioned above, with different types of organisational change activities and in the implementation of different types of technologies, thus reducing one of the limitations of this study. For example, implementing an organisational change in an organisation predominately staffed by volunteers would greatly increase the chances that crowding-out would occur and applying interventions to reduce this effect would increase the robustness of this study's findings.

In this study a participatory user-led approach has been used and has been successful in an NPO. Applying this type of approach to public or commercial organisations may also be beneficial in terms of achieving greater technology and change acceptance resulting in a decrease in the high failure rates associated with organisation change efforts involving technology.

### **8.6.2 Model Testing**

Although the MTAM has been developed as a result of both the literature review and action research sections of this study, it does require further testing, challenging and possible refinement. The sample size for the survey was small and, as such, formal conclusions cannot be drawn from the data analysis which has been presented. Further testing could include:

- Refinement of existing propositions and expansion of propositions to include demographics for example;
- Data collection from larger samples using more sophisticated data analysis techniques could be used to confirm the accuracy of results, even though the majority of propositions were consistent with previous research; and
- Refinement of the survey instrument itself to reduce the number questions.

And while some future research recommendations have been highlighted above, other areas of future research could include the review (and possibly a further expansion) of the motivation concept with regard not only to technology acceptance but to organisational change in general. Further study into what is perceived to be 'autonomously supportive' in terms of applying change and project management interventions would be beneficial to reducing crowding-out in change projects. Finally, as per Davis (2004, pp. 138-139) "longitudinal case studies focusing on individuals as they move through the entire change process from prior to the implementation and continuing till after the change process" focussing on the type of motivation (through self-regulation, as per the motivational continuum) during the change process would provide further validation that motivation crowding theory is empirically relevant.

## **8.7 Chapter Summary**

The conclusion of the research study was presented in this chapter, commencing with a summary of the background leading to this project presented in Section 8.1. The summary reminds the reader of how this project came about and provides the context for restating the research questions.

Section 8.2 presents the findings of the study, by restating and answering each of the three research questions. Following this, a more in-depth discussion of the findings is presented in the Discussion section, commencing with a demonstration of how the mixed method research design was appropriate for this study. The integration of findings is presented following the developmental purpose of the mixed method design, whereby the action research phases were used to develop the MTAM, and propositions which were tested with a survey. Using this mixed method approach has allowed me to present stronger inferences, as outlined in Section 8.3.2.

Both the theoretical and practical contributions have been outlined in Section 8.4, which can be applied to other sectors such education and public sectors. The findings presented here can help to reduce long term failure rates of any organisational change project, because a fuller understanding of the motivation concept has been provided and how it relates to acceptance. The action research study within the partner organisation, reported in this thesis, provides valuable knowledge, and can be used to generate further research. The use of the coding technique associated with grounded theory has been well documented in thesis and has been demonstrated as being relevant for the IS and social sciences research communities. The limitations, particularly in relation to using action research and small sample size of survey respondents are also reviewed.

Finally a discussion about future research is presented in Section 8.6, broken into two areas; other settings and model testing. Just as any intervention can be applied in the MTAM so too, can any acceptance be applied to this model (see Section 8.3.2), for example a process change. The redefinition of PU and PEOU can also be used for other acceptance models as well, by substitution of the word 'system' as demonstrated in Section 8.3.2 demonstrating this research has broad implications for a number of studies and research fields.

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## Appendix 2: Ethics Approval

Please note the title of the Project changed after the action research study had been completed.

### MEMORANDUM

HUMAN RESEARCH ETHICS COMMITTEE (TASMANIA) NETWORK

Social Science Ethics Officer  
Private Bag 01 Hobart  
Tasmania 7001 Australia  
Tel: (03) 6226 2764  
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Marilyn.Knott@utas.edu.au



### MINIMAL RISK ETHICS APPLICATION APPROVAL

17 August 2010

Professor Peter Marshall  
Computing  
Private Bag 87  
Hobart

**Ethics Reference: H11220**

**Towards a methodology for effective ICT enabled transformation of non-profit organisations within the framework of motivation crowding theory.**

Dear Professor Marshall

Acting on a mandate from the Tasmania Social Sciences HREC, the Chair of the committee considered and approved the above project on 13 August 2010, with the exception of the survey component. Please submit an amendment application for the survey once the final survey has been developed.

Please note that this approval is for four years and is conditional upon receipt of an annual Progress Report. Ethics approval for this project will lapse if a Progress Report is not submitted.

The following conditions apply to this approval. Failure to abide by these conditions may result in suspension or discontinuation of approval.

1. It is the responsibility of the Chief Investigator to ensure that all investigators are aware of the terms of approval, to ensure the project is conducted as approved by the Ethics Committee, and to notify the Committee if any investigators are added to, or cease involvement with, the project.
2. Complaints: If any complaints are received or ethical issues arise during the course of the project, investigators should advise the Executive Officer of the Ethics Committee on 03 6226 7479 or [human.ethics@utas.edu.au](mailto:human.ethics@utas.edu.au).
3. Incidents or adverse effects: Investigators should notify the Ethics Committee immediately of any serious or unexpected adverse effects on participants or unforeseen events affecting the ethical acceptability of the project.

4. Amendments to Project: Modifications to the project must not proceed until approval is obtained from the Ethics Committee. Please submit an Amendment Form (available on our website) to notify the Ethics Committee of the proposed modifications.
5. Annual Report: Continued approval for this project is dependent on the submission of a Progress Report by the anniversary date of your approval. You will be sent a courtesy reminder closer to this date. **Failure to submit a Progress Report will mean that ethics approval for this project will lapse.**
6. Final Report: A Final Report and a copy of any published material arising from the project, either in full or abstract, must be provided at the end of the project.

Yours sincerely

Melanie Horder  
Ethics Officer

## **Appendix 3: Information Sheet and Consent Form**

### **Appendix 3.1: Participant Information Sheet**

Please note the title of the Project changed after the action research study had been completed.

#### **PARTICIPANT INFORMATION SHEET SOCIAL SCIENCE/HUMANITITES RESEARCH**

Title of Project:

**Towards a methodology for effective ICT enabled transformation of non-profit organisations within the framework of motivation crowding theory.**

#### **Invitation**

You are invited to participate in a research study to design an organisational change framework which non-profit organisations may use to help guide them through an effective information and communication technological change, focusing on the motivation of staff to undertake and accept these changes. This study is running in parallel within the organisational change project currently being undertaken within UnitingCare Wesley Adelaide Inc. by the organisation.

This study is being conducted for the PhD of:

Nicole Howard

PhD Candidate

School of Computing and Information Systems

University of Tasmania

Under the supervisor of:

Professor Peter Marshall

Head of IS Discipline & Woolworths' Chair of IT and Systems

School of Computing and Information Systems

University of Tasmania

Professor Paul Swatman

Adjunct Professor

School of Computing and Information Systems

University of Tasmania

### **1. ‘What is the purpose of this study?’**

The purpose is to investigate the mutual interaction of organisational change, the intrinsic motivation of the workforce, and how this can be a constraint on and/or enabler of acceptance to change and information systems (technology) adoption. This will be achieved by understanding the differences of both intrinsic and extrinsic motivations during the organisational change process.

### **2. ‘Why have I been invited to participate in this study?’**

You are eligible to participate in this study because you are either a paid employee or volunteer of a non-profit organisation.

It is important to note here that not all staff will be asked to participate in all phases of this research study. Only those staff currently undertaking the organisational change process will be observed by the researcher who is embedded within the organisational change team. \ Based on observations and information collected from change management records some staff may be asked to take part in one-on-one interviews with the researcher and/or a focus group. All staff will be asked to take part in the survey phase of this study as outlined below.

### **3. ‘Why have I been invited to participate in this study?’**

UnitingCare Wesley Adelaide Inc. is currently undergoing an organisational change process. The organisation wants to understand how organisational change impacts the motivation of its staff. To that end, this study involves the PhD candidate being embedded within the organisational change team. She will be observing staff who are undertaking the organisational change process and during information and training sessions that staff are required to attend as part of this organisational change to investigate the attitudes towards change and technology adoption and how this might impact your motivation within the workplace.

In parallel with this, the PhD candidate is also undertaking academic research in the fields of organisational change, technology adoption, and motivation within the non-profit sector to enable more generalised conclusions to be made from this study.

Based on observations, information collected from change management records and with the approval of UnitingCare Wesley Adelaide selected members of the organisation will be asked to take part in individual interviews (around one hour in length), and focus groups (around two hours in length). These members will be asked to complete a Consent Form prior to any participation in this section of the project and return this directly to the researcher, thus ensuring that staff at UnitingCare Wesley Adelaide will not know who has consented to take part in this section of the project. If you are requested to take part it is requested that you also maintain confidentiality. All interviews will be audio recorded and notes will be taken by the researcher for the focus groups. To protect the anonymity of participant's pseudo names will be used linked to a separate master list containing identifying information held by the researcher. All raw data (audio files, notes) will be held by the researcher with no access given to any member of UnitingCare Wesley Adelaide.

Sometime during the project you will be asked to take part in completing an anonymous survey covering these issues: attitudes towards change; technology and motivation. It is anticipated that the survey will take around an hour to complete and that completion and submission of this survey will signify your consent to taking part in this aspect of the project. All surveys will be directly returned to the researcher and no staff member of UnitingCare Wesley Adelaide will have access to the raw data collected during this survey thus assuring anonymity.

It is important that you understand that your involvement in this study is voluntary. While we would be pleased to have you participate, we respect your right to decline. There will be no consequences to you if you decide not to participate, and this will not affect you in any way. If you decide to discontinue participation at any time, you may do so without providing an explanation. All information will be treated in a confidential manner, and your name will not be used in any publication arising out of the research. All of the research will be kept in a locked cabinet in the office of Nicole Howard during the project. Following publication of the PhD Thesis all data will be transferred to a locked cabinet held in the Chief investigator's office at the University of Tasmania where it will be securely destroyed after five years.

#### **4. 'Are there any possible benefits from participation in this study?'**

Whilst it is anticipated that there will be no personal direct benefit from participating in this study, we would be interested to see if you experience any other benefits that you feel you have experienced as result of this study.

If we are able to take the findings of this small study and link them with a wider study, the result may be valuable information for others and it may lead to non-profit organisations being able to perform and handle organisational change better. The gained efficiencies from undertaking an information and communication technological transformation will provide benefits for non-profit organisations to adjust themselves to changes in the sector and to all Australians which will experience improved service delivery from organisations such as yours.

**5. ‘Are there any possible risks from participation in this study?’**

There are no specific risks anticipated with participation in this study.

**6. ‘What if I have questions about this research?’**

If you would like to discuss any aspect of this study please feel free to contact Prof. Peter Marshall on ph 03 6226 6255, who would be happy to discuss any aspect of the research with you.

This study has been approved by the Tasmanian Social Science Human Research Ethics Committee. If you have concerns or complaints about the conduct of this study should contact the Executive Officer of the HREC (Tasmania) Network on (03) 6226 7479 or email [human.ethics@utas.edu.au](mailto:human.ethics@utas.edu.au). The Executive Officer is the person nominated to receive complaints from research participants. You will need to quote H11220.

**Thank you for taking the time to consider this study.**

## Appendix 3.2: Participant Consent Form

Title of Project:

**Towards a methodology for effective ICT enabled transformation of non-profit organisations within the framework of motivation crowding theory.**

---

1. I have read and understood the 'Information Sheet' for this project.
2. The nature and possible effects of the study have been explained to me.
3. I understand that the study involves the PhD candidate being embedded within the organisational change team where she will observe staff who are currently undertaking the organisational change process (initiated by UnitingCare Wesley Adelaide Inc.) during information and training sessions that staff are required to attend as part of this organisational change to investigate the attitudes towards change and technology adoption and how this might impact on the motivation of the workforce within the workplace.

I understand that the PhD Candidate is also undertaking academic research investigating organisational change, technology adoption and motivation, for more general use within the non-profit sector, in parallel with the organisational change process currently being undertaken. As a result of this academic research, I understand that I may be requested to take part in one-on-one interviews (around one hour in length) and/or a focus group (around two hours in length) based on observations and information collected from change management records to further investigate the issues listed above.

The research project will be ongoing from May 2010 until December 2012.

4. I understand there are no specific risks anticipated with participation in this study.
5. I understand that all research data will be securely stored in a locked cabinet in the office of Nicole Howard during the project. Following publication of the PhD Thesis all data will be moved to a locked cabinet held in the Chief investigator's office at the University of Tasmania where it will be securely destroyed after five years.
6. Any questions that I have asked have been answered to my satisfaction.
7. I agree that research data gathered from me for the study may be published provided that I cannot be identified as a participant.
8. I understand that the researchers will maintain my identity confidential and that any information I supply to the researcher(s) will be used only for the purposes of the research.
9. I agree to participate in this investigation and understand that I may withdraw at any time without any effect, and if I so wish, may request that any data I have supplied to date be withdrawn from the research.

Name of Participant:

---

Signature:

Date:

---

### Statement by Investigator

☐

I have explained the project & the implications of participation in it to this volunteer and I believe that the consent is informed and that he/she understands the implications of participation

If the Investigator has not had an opportunity to talk to participants prior to them participating, the following must be ticked.



☐ The participant has received the Information Sheet where my details have been provided so participants have the opportunity to contact me prior to consenting to participate in this project.

Name of Investigator: Nicole Howard

---

Signature:

Date:

---

## Appendix 4: Proposed Interview Questions

These semi-structured interviews will be more of a discussion rather than following a traditional interview style. I want the person to feel comfortable and would like for their thoughts and words to flow freely as we discuss the implementation of the FCS and to a lesser extent overall organisational change within the organisation. The proposed list of questions will guide the data collection process. It has been decided that different types of information is required from different members of the proposed interview list. This will be gathered according to the position held within the organisation as demonstrated in the tables below. Where there are no tables the same information is to be collected from all participants. Please note that it is anticipated that the project team will be interviewed more than once to gather implementation and project specific information as well.

### **Background Information:**

How long have you been working in this position?

How long have you been working in this organisation?

Are you working full time or part time?

Mid-level Management	Executive Management
How many staff do you supervise?	How many people report to you?

### **Exploring the attitudes towards organisational change:**

Tell me what you think about the FCS?

Tell me about the process you have gone through during the implementation?

Admin Group	Mid-level Management	Executive Management
Why do you think the organisation is implementing it?		Why did the organisation decide to implement it?

How does this compare to any other organisational change process you have been through?

Can you tell me about any other changes going on right now in your area that have affected how you do your job?

### **Exploring the motivation of workers:**

How motivated are you to use the FCS?

Is there any particular reason why you chose to work for UCW Adelaide?

Do you find your work challenging?

Do you/would you like a challenge in your work?

Do you find that your work gives you satisfaction? In what way?

Can you tell me what part of your job gives you the greatest satisfaction?

Do you have input in determining how you do your job?

**Exploring the attitudes towards technology and its acceptance:**

How would you rate your knowledge of computers?

Do you enjoy using computers or do you view them as just a necessary part of your job?

How many technology changes have occurred in this organisation over the last 12 months?

Have you ever resisted a technology change?

## **Appendix 5: Data Analysis Documents**

These documents can be found in the attached electronic file.

## Appendix 6: Email to Participate in Survey

**Subject:** TCM - Work Motivation and Change Management Survey Invitation

Hello

You are invited to take part in a Work Motivation and Change Management Survey specifically targeted around the recent implementation of TCM within your organisation.

Work motivation plays a very important role in ensuring acceptance and implementation success of any organisational change event. This is also true when implementing or making changes to the information systems and/or information technology within an organisation. The purpose of this study is to investigate the mutual interaction of organisational change and the motivation of the workforce and how this can be a constraint on and/or an enabler of acceptance to change and information systems (technology) acceptance. The data collected from this survey will be used in a PhD thesis with the University of Tasmania.

This survey is anonymous and all of the research data gathered from the survey will be securely stored in a locked cabinet in the researcher's office. The researcher will maintain confidentiality at all times and no information will be published which may allow for identification of any participant based on the information supplied. It is important that you understand that your involvement in this study is voluntary. While we would be pleased to have you participate, we respect your right to decline. There will be no consequences to you if you decide not to participate, and this will not affect you in any way.

If you have any questions or concerns about any aspect of this study please feel free to contact Nicole Howard or Prof. Peter Marshall on ph: 03 6226 6255.

This study has been approved by the Tasmanian Social Science Human Research Ethics Committee. If you have concerns or complaints about the conduct of this study you should contact the Executive Officer of the HREC (Tasmania) Network on (03) 6226 7479 or email [human.ethics@utas.edu.au](mailto:human.ethics@utas.edu.au). The Executive Officer is the person nominated to receive complaints from research participants. You will need to quote H11220.

The survey itself should take between 10 and 15 minutes to complete. If you would like to participate in this survey please click on the link below and it will take you to the Survey. This survey will be open for completion between [insert date here] and [insert date here]

[insert link to Survey Monkey here]

Kind regards

## Appendix 7: Survey

### Appendix 7.1: Copyright Approval for Examination Only

Re: Permission to Publish Questionnaire Content in Examiner Only Phd Thesis

✖ DELETE   ← REPLY   ⇐ REPLY ALL   → FORWARD   ⋮



Shannon Hoefen <shannon@immersyve.com>

Wed 6/07/2016 2:21 AM

Mark as unread

To: ☐ Nicole Howard;

● You replied on 7/07/2016 7:59 AM.

Hi Nicole,

As long as the questionnaire won't be publicly published, and the items are only being provided/displayed for you and your dissertation committee, then you have our permission to use as part of your Appendix.

Best wishes with your dissertation,  
Shannon  
On behalf of Drs. Richard Ryan and Edward Deci

---

**From:** Nicole Howard

**Date:** Friday, June 24, 2016 at 10:38 PM

**To:** Shannon Hoefen

**Cc:** Paula Swatman

**Subject:** Permission to Publish Questionnaire Content in Examiner Only Phd Thesis

To Whom it May Concern,

Having reviewed and agreed to the Terms and Conditions on your Self Determination Theory website I would like to request written consent from the organisation to publish your survey questions in my PhD Thesis which is due for examination in the next two weeks. The Thesis is titled: "Technology Acceptance, Organisational Change and Autonomous Motivation: Reducing the Crowding-out Effect in the Non-Profit Sector."

I have incorporated (and adapted) a number of questions from a range of questionnaires as published on the SDT website in my Thesis. I would like to display the questions used in an appendix for examination purposes only. Prior to final publication all questions will be removed and they will not be published. Below is an outline of what I have used:

1. Basic Need Satisfaction at Work Scale: 14 questions
2. Perceived Autonomy Support – The Work Climate Questionnaire (WCQ): 4 questions
3. Intrinsic Motivation Inventory – 16 questions

Please let me know if you require any further information in order to grant permission to display the questions in the examiner only Thesis which is due for submission in two weeks. I look forward to hearing from you soon.

Regards  
Nicole Howard

## Appendix 7.2: Survey Instrument

### Section 1: Perception of Your Organisation

This section of the survey asks you about your perception of the organisation you work for.

Thinking about the organisation you work for please read each of the following items and indicate if you agree or disagree with each statement. Do not spend too long thinking about your answers.

1. People throughout my organisation share values or visions.  
☐ ☐ ☐ ☐ ☐ ☐ ☐  
Strongly Disagree                      Neutral                      Strongly Agree
2. I have an opportunity for input into decisions regarding plans that affect me/my work.  
☐ ☐ ☐ ☐ ☐ ☐ ☐  
Strongly Disagree                      Neutral                      Strongly Agree
3. There is a lot of cooperation and trust throughout the organisation.  
☐ ☐ ☐ ☐ ☐ ☐ ☐  
Strongly Disagree                      Neutral                      Strongly Agree
4. I feel valued and supported by management.  
☐ ☐ ☐ ☐ ☐ ☐ ☐  
Strongly Disagree                      Neutral                      Strongly Agree
5. Management understands the requirements of my work.  
☐ ☐ ☐ ☐ ☐ ☐ ☐  
Strongly Disagree                      Neutral                      Strongly Agree

### Section 2: Attitude Towards Organisational Change

This section of the survey asks you about your attitudes towards organisational change in general.

Thinking about organisational change in general please read each of the following items and indicate how true it is for you. Do not spend too long thinking about your answers.

6. Undertaking change makes me nervous.  
☐ ☐ ☐ ☐ ☐ ☐ ☐  
Not True at all                      Somewhat True                      Very True

7. I cannot feel at ease on the job where the ways of doing things are always being changed.

☐ ☐ ☐ ☐ ☐ ☐ ☐  
Not True at all                      Somewhat True                      Very True

8. I like a job where I know I will be doing my work about the same way from one week to the next.

☐ ☐ ☐ ☐ ☐ ☐ ☐  
Not True at all                      Somewhat True                      Very True

9. When I get used to doing things in one way it is disturbing to have to change to a new method.

☐ ☐ ☐ ☐ ☐ ☐ ☐  
Not True at all                      Somewhat True                      Very True

Thinking about the organisation you work for please read each of the following items and indicate if you agree or disagree with each statement. Do not spend too long thinking about your answers.

10. I sometimes find myself avoiding changes that I know will be good for my work.

☐ ☐ ☐ ☐ ☐ ☐ ☐  
Strongly Disagree                      Neutral                      Strongly Agree

11. Changing plans seems like a real hassle to me.

☐ ☐ ☐ ☐ ☐ ☐ ☐  
Strongly Disagree                      Neutral                      Strongly Agree

12. Often, I feel a bit uncomfortable even about change that may potentially improve my work.

☐ ☐ ☐ ☐ ☐ ☐ ☐  
Strongly Disagree                      Neutral                      Strongly Agree

13. When someone pressures me to change something, I tend to resist it even if I think the change may ultimately benefit me.

☐ ☐ ☐ ☐ ☐ ☐ ☐  
Strongly Disagree                      Neutral                      Strongly Agree

14. Once I have made plans, I'm not likely to change them.

☐ ☐ ☐ ☐ ☐ ☐ ☐  
Strongly Disagree                      Neutral                      Strongly Agree

### Section 3: Motivation to Undertake Change

This section of the survey measures your motivation to undertake an organisational change event. It asks you about your opinions and feelings during a change event.

Thinking about the introduction of TCM as an organisational change event, please read each of the following items and indicate how true it is for you. Do not spend too long thinking about your answers.

15. Question Removed for Final Publication.

<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Not True			Somewhat			Very
at all			True			True

16. Question Removed for Final Publication.

<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Not True			Somewhat			Very
at all			True			True

17. Question Removed for Final Publication.

<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Not True			Somewhat			Very
at all			True			True

18. Question Removed for Final Publication.

<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Not True			Somewhat			Very
at all			True			True

19. Question Removed for Final Publication.

<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Not True			Somewhat			Very
at all			True			True

20. Question Removed for Final Publication.

<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Not True			Somewhat			Very
at all			True			True

21. Question Removed for Final Publication.

<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Not True			Somewhat			Very
at all			True			True

22. Question Removed for Final Publication.

<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Not True			Somewhat			Very
at all			True			True

23. Question Removed for Final Publication.

<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Not True			Somewhat			Very
at all			True			True

24. Question Removed for Final Publication.

<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Not True			Somewhat			Very
at all			True			True

25. Question Removed for Final Publication.

<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Not True			Somewhat			Very
at all			True			True

26. Question Removed for Final Publication.

<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Not True			Somewhat			Very
at all			True			True

27. Question Removed for Final Publication.

<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Not True			Somewhat			Very
at all			True			True

28. Question Removed for Final Publication.

<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Not True			Somewhat			Very
at all			True			True

29. Question Removed for Final Publication.

<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Not True			Somewhat			Very
at all			True			True

30. Question Removed for Final Publication.

<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Not True			Somewhat			Very
at all			True			True

31. Question Removed for Final Publication.

<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Not True			Somewhat			Very
at all			True			True

32. Question Removed for Final Publication.

<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Not True			Somewhat			Very
at all			True			True



33. Question Removed for Final Publication

☐ ☐ ☐ ☐ ☐ ☐ ☐

Not True at all                      Somewhat True                      Very True

34. Question Removed for Final Publication.

☐ ☐ ☐ ☐ ☐ ☐ ☐

Not True at all                      Somewhat True                      Very True

35. Question Removed for Final Publication.

☐ ☐ ☐ ☐ ☐ ☐ ☐

Not True at all                      Somewhat True                      Very True

36. I felt that I personally had control over the implemented changes in my work area.

☐ ☐ ☐ ☐ ☐ ☐ ☐

Not True at all                      Somewhat True                      Very True

37. I had the opportunity to propose ways of implementing the changes?

☐ ☐ ☐ ☐ ☐ ☐ ☐

Not True at all                      Somewhat True                      Very True

38. I felt that I personally had influence in the way the changes are implemented?

☐ ☐ ☐ ☐ ☐ ☐ ☐

Not True at all                      Somewhat True                      Very True

#### Section 4. Change Management

This section of the survey asks about your perception of how organisational change is managed.

Thinking about the introduction of TCM as an organisational change event, please read each of the following items and indicate how true it is for you. Do not spend too long thinking about your answers.

39. Question Removed for Final Publication.

☐ ☐ ☐ ☐ ☐ ☐ ☐

Not True at all                      Somewhat True                      Very True

40. Question Removed for Final Publication.

☐ ☐ ☐ ☐ ☐ ☐ ☐

Not True at all                      Somewhat True                      Very True

41. Question Removed for Final Publication.

☐ ☐ ☐ ☐ ☐ ☐ ☐

Not True at all                      Somewhat True                      Very True

Thinking about the introduction of TCM as an organisational change event, please read each of the following items and indicate if you agree or disagree with each statement. Do not spend too long thinking about your answers

42. Senior management publicly expressed their commitment to the implementation of TCM.

☐ ☐ ☐ ☐ ☐ ☐ ☐

Strongly Disagree                      Neutral                      Strongly Agree

43. Question Removed for Final Publication.

☐ ☐ ☐ ☐ ☐ ☐ ☐

Strongly Disagree                      Neutral                      Strongly Agree

44. Question Removed for Final Publication.

☐ ☐ ☐ ☐ ☐ ☐ ☐

Strongly Disagree                      Neutral                      Strongly Agree

45. Question Removed for Final Publication.

☐ ☐ ☐ ☐ ☐ ☐ ☐

Strongly Disagree                      Neutral                      Strongly Agree

46. The implementation of TCM was backed by a strong champion.

☐ ☐ ☐ ☐ ☐ ☐ ☐

Strongly Disagree                      Neutral                      Strongly Agree

47. I feel that I completely understand the reasons why TCM was being implemented.

☐ ☐ ☐ ☐ ☐ ☐ ☐

Strongly Disagree                      Neutral                      Strongly Agree

48. I felt that this organisation provided me with the necessary information to understand the reasons behind why TCM is being implemented?

☐ ☐ ☐ ☐ ☐ ☐ ☐

Strongly Disagree                      Neutral                      Strongly Agree

49. I understand why TCM is being implemented in this way?

☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐

Strongly Disagree Neutral Strongly Agree

50. I felt that this organisation took into account my opinions and ideas during the TCM implementation project.

☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐

Strongly Disagree Neutral Strongly Agree

51. Question Removed for Final Publication..

☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐

Strongly Disagree Neutral Strongly Agree

52. To some extent my worries were taken into account before and/or during the implementation of TCM?

☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐

Strongly Disagree Neutral Strongly Agree

53. Question Removed for Final Publication.

☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐

Not True at all Somewhat True Very True

54. Specialised instruction about the implementation of TCM was available to me.

☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐

Strongly Disagree Neutral Strongly Agree

55. A specific person (or group) was available for assistance during the implementation of TCM.

☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐

Strongly Disagree Neutral Strongly Agree

56. The benefit of the implementation of TCM was widely published.

☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐

Strongly Disagree Neutral Strongly Agree

57. Question Removed for Final Publication.

☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐

Strongly Disagree Neutral Strongly Agree

58. Question Removed for Final Publication.

☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐

Strongly Disagree Neutral Strongly Agree

59. The implementation of TCM is compatible with all aspects of my work.

☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐

Strongly Disagree Neutral Strongly Agree

60. I think that the implementation of TCM fits well with the way I like to work.

☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐

Strongly Disagree Neutral Strongly Agree

61. Question Removed for Final Publication.

☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐

Strongly Disagree Neutral Strongly Agree

62. I feel the change would be easy to undertake.

☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐

Strongly Disagree Neutral Strongly Agree

63. Question Removed for Final Publication.

☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐

Strongly Disagree Neutral Strongly Agree

64. Question Removed for Final Publication.

☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐

Strongly Disagree Neutral Strongly Agree

65. Learning how to use TCM would be easy for me.

☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐

Strongly Disagree Neutral Strongly Agree

66. I was determined to give TCM a go in my work area.

☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐

Strongly Disagree Neutral Strongly Agree

## Section 5. How You View Change

This section of the survey asks about your perception of the organisational change event and how it impacts you and your work.

Thinking about the introduction of TCM as an organisational change event, please read each of the following items and indicate if you agree or disagree with each statement. Do not spend too long thinking about your answers.

67. I find the changes frustrating.

☐ ☐ ☐ ☐ ☐ ☐ ☐

Strongly Disagree Neutral Strongly Agree

68. If I find using TCM difficult I will just revert back to the way I was doing my job before.

☐ ☐ ☐ ☐ ☐ ☐ ☐

Strongly Disagree Neutral Strongly Agree

69. I have implemented the changes brought about by the implementation of TCM into my work.

☐ ☐ ☐ ☐ ☐ ☐ ☐

Strongly Disagree Neutral Strongly Agree

70. I like the new changes.

☐ ☐ ☐ ☐ ☐ ☐ ☐

Strongly Disagree Neutral Strongly Agree

Thinking about the introduction of TCM, please read each of the following items and indicate how true it is for you. Do not spend too long thinking about your answers.

71. In my job, usage of TCM is relevant.

☐ ☐ ☐ ☐ ☐ ☐ ☐

Not True at all Somewhat True Very True

72. In my job, usage of TCM is important.

☐ ☐ ☐ ☐ ☐ ☐ ☐

Not True at all Somewhat True Very True

73. Given that I had access to TCM I intend to use it.

☐ ☐ ☐ ☐ ☐ ☐ ☐

Not True at all Somewhat True Very True

74. I plan to use TCM in the next 3 months.

☐ ☐ ☐ ☐ ☐ ☐ ☐

Not True at all Somewhat True Very True

75. On average, how much time do you spend on TCM each work day?

\_\_\_\_ Hours \_\_\_\_ Minutes

77. What is your age? \_\_\_\_ Years

78. What is the highest level of education you have completed?

- ☐ High School Certificate or Less
- ☐ Certificate/Trade Certificate
- ☐ Undergraduate Diploma
- ☐ Bachelor's Degree
- ☐ Postgraduate Certificate or Diploma
- ☐ Master's Degree or Higher

79. What is your job category?

- ☐ Community Care/Community Services
- ☐ Counselling and/or Caseworker
- ☐ Aged Care Worker
- ☐ Administrative and/or Support Worker
- ☐ Manager
- ☐ Senior Manager

80. How long have you worked for this organisation?

\_\_\_\_ Years \_\_\_\_ Months

81. Please indicate what Service Area you work in.

- ☐ Community Services
- ☐ Family Services
- ☐ Youth Services
- ☐ Information & Knowledge Management

82. Please indicate if you work Full Time or Part Time.

- ☐ Full Time ☐ Part Time

83. What is your current working agreement?

- ☐ Permanent ☐ Contract
- ☐ Casual ☐ Volunteer

## Section 6: Demographic Information

This section of the survey asks you to tell us a bit about yourself.

76. What is your gender?

- ☐ Female ☐ Male

## Appendix 8: SPSS® Survey Results

### Appendix 8.1: Scale Items - Reliability Results

#### Basic Needs Satisfaction

```
RELIABILITY
/VARIABLES=safe1 safe2 safe3 safe4 rel1 rel2 rel3 rel4 rel7 rel8 rel9 est1
est2 est3 est4 est5 est7 aut1 aut2 aut3 aut4 aut5 aut6 aut7
/SCALE('Needs Satisfaction Pilot Items Removed') ALL
/MODEL=ALPHA
/STATISTICS=DESCRIPTIVE SCALE CORR
/SUMMARY=TOTAL CORR.
```

Reliability Statistics		
Cronbach's		
Alpha Based on		
Cronbach's	Standardized	
Alpha	Items	N of Items
.924	.927	24

#### Safety Needs

```
RELIABILITY
/VARIABLES=safe1 safe2 safe3 safe4
/SCALE('Safety Needs Item Pilot Item Removed') ALL
/MODEL=ALPHA
/STATISTICS=DESCRIPTIVE SCALE CORR
/SUMMARY=TOTAL CORR.
```



Reliability Statistics		
Cronbach's		
Alpha Based on		
Cronbach's	Standardized	
Alpha	Items	N of Items
.561	.520	4

#### Relatedness Needs

```
RELIABILITY
/VARIABLES=rel1 rel2 rel3 rel4 rel7 rel8 rel9
/SCALE('Relatedness Needs Pilot Item Removed') ALL
/MODEL=ALPHA
/STATISTICS=DESCRIPTIVE SCALE CORR
/SUMMARY=TOTAL CORR.
```



Reliability Statistics		
Cronbach's		
Alpha Based on		
Cronbach's	Standardized	
Alpha	Items	N of Items
.825	.824	7

## Esteem Needs

```
RELIABILITY¶
  .. /VARIABLES=est1 .est2 .est3 .est4 .est5 .est7¶
  .. /SCALE('Esteem Needs Pilot Item Removed') .ALL¶
  .. /MODEL=ALPHA¶
  .. /STATISTICS=DESCRIPTIVE .SCALE .CORR¶
  .. /SUMMARY=TOTAL .CORR.¶
¶
```

Reliability Statistics <sup>a</sup>		
Cronbach's		
Alpha Based on		
Cronbach's	Standardized	
Alpha <sup>a</sup>	Items <sup>a</sup>	N of Items <sup>a</sup>
.861 <sup>a</sup>	.871 <sup>a</sup>	6 <sup>a</sup>

## Autonomy Needs

```
RELIABILITY¶
  .. /VARIABLES=aut1 .aut2 .aut3 .aut4 .aut5 .aut6 .aut7¶
  .. /SCALE('Autonomy Needs Pilot') .ALL¶
  .. /MODEL=ALPHA¶
  .. /STATISTICS=DESCRIPTIVE .SCALE .CORR¶
  .. /SUMMARY=TOTAL .CORR.¶
¶
```

Reliability Statistics <sup>a</sup>		
Cronbach's		
Alpha Based on		
Cronbach's	Standardized	
Alpha <sup>a</sup>	Items <sup>a</sup>	N of Items <sup>a</sup>
.890 <sup>a</sup>	.900 <sup>a</sup>	7 <sup>a</sup>

## Autonomously Supportive Interventions

```
RELIABILITY¶
  .. /VARIABLES=ichg1 ichg2 mrat1 mrat2 mrat3 mrat4 apf1 apf3 recon1 recon3 recon4 .
  recon5 .recon6¶
  .. /SCALE('Interventions Group Pilot Items Removed') .ALL¶
  .. /MODEL=ALPHA¶
  .. /STATISTICS=DESCRIPTIVE .SCALE .CORR¶
  .. /SUMMARY=TOTAL .CORR.¶
¶
```

Reliability Statistics <sup>a</sup>		
Cronbach's		
Alpha Based on		
Cronbach's	Standardized	
Alpha <sup>a</sup>	Items <sup>a</sup>	N of Items <sup>a</sup>
.930 <sup>a</sup>	.944 <sup>a</sup>	13 <sup>a</sup>

## Autonomous Interventions - Importance of Change

```
GET
  ..FILE='F:\Chapter 7\Pilot Test SPSS Results\Pilot Test Results.sav'.
DATASET NAME DataSet1 WINDOW=FRONT.
RELIABILITY
  ..VARIABLES=ichg1 ichg2
  ..SCALE('Importance of Change Pilot') ALL
  ..MODEL=ALPHA
  ..STATISTICS=DESCRIPTIVE SCALE CORR
  ..SUMMARY=TOTAL CORR.
```

Reliability Statistics		
Cronbach's Alpha Based on Standardized Items		
Cronbach's Alpha	Items	N of Items
.583	.583	2

## Autonomous Interventions - Meaningful Rationale

```
RELIABILITY
  ..VARIABLES=mrat1 mrat2 mrat3 mrat4
  ..SCALE('Meaningful Rationale Pilot') ALL
  ..MODEL=ALPHA
  ..STATISTICS=DESCRIPTIVE SCALE CORR
  ..SUMMARY=TOTAL CORR.
```

Reliability Statistics		
Cronbach's Alpha Based on Standardized Items		
Cronbach's Alpha	Items	N of Items
.847	.865	4

## Autonomous Interventions - Acknowledging Feelings and Perspectives

```
RELIABILITY
  ..VARIABLES=apf1 apf3
  ..SCALE('Acknowledging Perspectives Pilot Item Removed') ALL
  ..MODEL=ALPHA
  ..STATISTICS=DESCRIPTIVE SCALE CORR
  ..SUMMARY=TOTAL CORR.
```

Reliability Statistics		
Cronbach's Alpha Based on Standardized Items		
Cronbach's Alpha	Items	N of Items
.878	.907	2

## Autonomous Interventions - Respectful and Concerned

```
RELIABILITY¶
  .. /VARIABLES=recon1-recon3-recon4-recon5-recon6¶
  .. /SCALE('Respectful-and-Concerned-Pilot-Item-Removed')-ALL¶
  .. /MODEL=ALPHA¶
  .. /STATISTICS=DESCRIPTIVE-SCALE-CORR¶
  .. /SUMMARY=TOTAL-CORR.¶
¶
```

Reliability-Statistics <sup>α</sup>		
Cronbach's-		
Alpha-Based-on-		
Cronbach's-	Standardized-	
Alpha <sup>α</sup>	Items <sup>α</sup>	N-of-Items <sup>α</sup>
.858 <sup>κ</sup>	.891 <sup>κ</sup>	5 <sup>κ</sup>

## Types of Motivation – Amotivation (Pressure & Tension)

```
RELIABILITY¶
  .. /VARIABLES=amot2-amot3-amot4-amot5¶
  .. /SCALE('Amotivation-Item-Removed')-ALL¶
  .. /MODEL=ALPHA¶
  .. /STATISTICS=DESCRIPTIVE-SCALE-CORR¶
  .. /SUMMARY=TOTAL-CORR.¶
¶
```

Reliability-Statistics <sup>α</sup>		
Cronbach's-		
Alpha-Based-on-		
Cronbach's-	Standardized-	
Alpha <sup>α</sup>	Items <sup>α</sup>	N-of-Items <sup>α</sup>
.852 <sup>κ</sup>	.860 <sup>κ</sup>	4 <sup>κ</sup>

## Types of Motivation – Autonomous (Interest/Enjoyment)

```
RELIABILITY¶
  .. /VARIABLES=autie2-autie1-autie3¶
  .. /SCALE('Autonomous-Interest-Pilot')-ALL¶
  .. /MODEL=ALPHA¶
  .. /STATISTICS=DESCRIPTIVE-SCALE-CORR¶
  .. /SUMMARY=TOTAL-CORR.¶
¶
```

Reliability-Statistics <sup>α</sup>		
Cronbach's-		
Alpha-Based-on-		
Cronbach's-	Standardized-	
Alpha <sup>α</sup>	Items <sup>α</sup>	N-of-Items <sup>α</sup>
.892 <sup>κ</sup>	.890 <sup>κ</sup>	3 <sup>κ</sup>

## Types of Motivation – Autonomous (Perceived Choice)

```
RELIABILITY¶
  .. /VARIABLES=autpc1 .autpc2 .autpc3 .autpc4 .autpc5 .autpc6 .autpc7¶
  .. /SCALE('Autonomous Choice Pilot') .ALL¶
  .. /MODEL=ALPHA¶
  .. /STATISTICS=DESCRIPTIVE .SCALE .CORR¶
  .. /SUMMARY=TOTAL .CORR.¶
```

+

Reliability Statistics		
Cronbach's		
Alpha Based on		
Cronbach's	Standardized	
Alpha	Items	N of Items
.920	.908	7

## Perceived Usefulness

```
RELIABILITY¶
  .. /VARIABLES=pu1 .pu2 .pu3 .pu4¶
  .. /SCALE('Perceived Usefulness Pilot') .ALL¶
  .. /MODEL=ALPHA¶
  .. /STATISTICS=DESCRIPTIVE .SCALE .CORR¶
  .. /SUMMARY=TOTAL .CORR.¶
```

¶

Reliability Statistics		
Cronbach's		
Alpha Based on		
Cronbach's	Standardized	
Alpha	Items	N of Items
.938	.970	4

## Perceived Ease of Use

```
RELIABILITY¶
  .. /VARIABLES=peou1 .peou2 .peou4 .peou5¶
  .. /SCALE('PEOU Pilot Item Removed') .ALL¶
  .. /MODEL=ALPHA¶
  .. /STATISTICS=DESCRIPTIVE .SCALE .CORR¶
  .. /SUMMARY=TOTAL .CORR.¶
```

¶

Reliability Statistics		
Cronbach's		
Alpha Based on		
Cronbach's	Standardized	
Alpha	Items	N of Items
.858	.911	4



## Behavioural Intention – Acceptance

```
RELIABILITY¶
  .. /VARIABLES=acc1 .acc2 .acc3¶
  .. /SCALE('Acceptance .Pilot') .ALL¶
  .. /MODEL=ALPHA¶
  .. /STATISTICS=DESCRIPTIVE .SCALE .CORR¶
  .. /SUMMARY=TOTAL .CORR.¶
¶
```

Reliability Statistics <sup>a</sup>		
Cronbach's		
Alpha Based on		
Cronbach's	Standardized	
Alpha <sup>a</sup>	Items <sup>a</sup>	N of Items <sup>a</sup>
.788 <sup>c</sup>	.816 <sup>c</sup>	3 <sup>c</sup>

## Behavioural Intention – Persistence

```
RELIABILITY¶
  .. /VARIABLES=per1 .per3¶
  .. /SCALE('Persistence .Pilot .Item .Removed') .ALL¶
  .. /MODEL=ALPHA¶
  .. /STATISTICS=DESCRIPTIVE .SCALE .CORR¶
  .. /SUMMARY=TOTAL .CORR.¶
¶
```

Reliability Statistics <sup>a</sup>		
Cronbach's		
Alpha Based on		
Cronbach's	Standardized	
Alpha <sup>a</sup>	Items <sup>a</sup>	N of Items <sup>a</sup>
.787 <sup>c</sup>	.834 <sup>c</sup>	2 <sup>c</sup>

## Behavioural Intention – Resistance

```
RELIABILITY¶
  .. /VARIABLES=res1 .res2 .res3 .res4 .res5¶
  .. /SCALE('Resistance .Pilot') .ALL¶
  .. /MODEL=ALPHA¶
  .. /STATISTICS=DESCRIPTIVE .SCALE .CORR¶
  .. /SUMMARY=TOTAL .CORR.¶
¶
```

Reliability Statistics <sup>a</sup>		
Cronbach's		
Alpha Based on		
Cronbach's	Standardized	
Alpha <sup>a</sup>	Items <sup>a</sup>	N of Items <sup>a</sup>
.837 <sup>c</sup>	.862 <sup>c</sup>	5 <sup>c</sup>

## Appendix 8.2: Proposition - Correlation Results

### Proposition 1

```

CORRELATIONS
/VARIABLES=TMotivation TBasicNeeds
/PRINT=TWOTAIL NOSIG
/MISSING=PAIRWISE.

```

Correlations			
		Total Motivation	Total Basic Needs Satisfaction
Total Motivation	Pearson Correlation	1	.795**
	Sig. (2-tailed)		.000
	N	45	45
Total Basic Needs Satisfaction	Pearson Correlation	.795**	1
	Sig. (2-tailed)	.000	
	N	45	45

\*\* . Correlation is significant at the 0.01 level (2-tailed).

### Proposition 2

```

CORRELATIONS
/VARIABLES=TBasicNeeds TInterventions
/PRINT=TWOTAIL NOSIG
/MISSING=PAIRWISE.

```

Correlations			
		Total Basic Needs Satisfaction	Total Interventions
Total Basic Needs Satisfaction	Pearson Correlation	1	.767**
	Sig. (2-tailed)		.000
	N	45	45
Total Interventions	Pearson Correlation	.767**	1
	Sig. (2-tailed)	.000	
	N	45	45

\*\* . Correlation is significant at the 0.01 level (2-tailed).

□

### Proposition 3

```

CORRELATIONS
/VARIABLES=TMotivation TInterventions
/PRINT=TWOTAIL NOSIG
/MISSING=PAIRWISE.

```

Correlations			
		Total Motivation	Total Interventions
Total Motivation	Pearson Correlation	1	.514**
	Sig. (2-tailed)		.000
	N	45	45
Total Interventions	Pearson Correlation	.514**	1
	Sig. (2-tailed)	.000	
	N	45	45

\*\* . Correlation is significant at the 0.01 level (2-tailed).

### Proposition 4

```

CORRELATIONS
/VARIABLES=TMotivation TPEOU
/PRINT=TWOTAIL NOSIG
/MISSING=PAIRWISE.

```

Correlations			
		Total Motivation	Total PEOU
Total Motivation	Pearson Correlation	1	.441**
	Sig. (2-tailed)		.002
	N	45	45
Total PEOU	Pearson Correlation	.441**	1
	Sig. (2-tailed)	.002	
	N	45	45

\*\* . Correlation is significant at the 0.01 level (2-tailed).

## Proposition 5

```

CORRELATIONS
/VARIABLES=TMotivation TPU
/PRINT=TWOTAIL NOSIG
/MISSING=PAIRWISE.

```

Correlations			
		Total Motivation	Total PU
Total Motivation	Pearson Correlation	1	.634**
	Sig. (2-tailed)		.000
	N	45	45
Total PU	Pearson Correlation	.634**	1
	Sig. (2-tailed)	.000	
	N	45	45

\*\* . Correlation is significant at the 0.01 level (2-tailed).

## Proposition 6 – Acceptance

```

CORRELATIONS
/VARIABLES=TBI TPerceived
/PRINT=TWOTAIL NOSIG
/MISSING=PAIRWISE.

```

Correlations			
		Total Accept	Total PU PEOU
Total Accept	Pearson Correlation	1	.796**
	Sig. (2-tailed)		.000
	N	45	45
Total PU PEOU	Pearson Correlation	.796**	1
	Sig. (2-tailed)	.000	
	N	45	45

\*\* . Correlation is significant at the 0.01 level (2-tailed).

## Proposition 6 – Resistance

```

CORRELATIONS
/VARIABLES=TResist TPerceived
/PRINT=TWOTAIL NOSIG
/MISSING=PAIRWISE.

```

Correlations			
		Total Resistance	Total PU PEOU
Total Resistance	Pearson Correlation	1	-.411**
	Sig. (2-tailed)		.006
	N	44	44
Total PU PEOU	Pearson Correlation	-.411**	1
	Sig. (2-tailed)	.006	
	N	44	45

\*\* . Correlation is significant at the 0.01 level (2-tailed).